

EXHIBIT H

Page 1

1 UNITED STATES DISTRICT COURT

2 DISTRICT OF NEW JERSEY

3

4 MDL NO. 16-2738 (MAS) (RLS)

5

6 IN RE JOHNSON & JOHNSON TALCUM)

7 POWDER PRODUCTS MARKETING,) DEPOSITION OF:

8 SALES PRACTICES, AND PRODUCTS) SHU-CHUN SU

9 LIABILITY LITIGATION,)

10)

11)

12 _____)

13

14

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16

17

18 TRANSCRIPT of the stenographic notes of
19 the proceedings in the above-entitled matter, as
20 taken by and before SANDRA A. ROBERTSON, a Certified
21 Court Reporter and Notary Public of the State of New
22 Jersey, held at THE HELDRICH HOTEL 10 Livingston
23 Avenue, New Brunswick, New Jersey, on July 11, 2024,
24 commencing at 9:13 a.m.

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1	*****		1	This might take a while so feel free to ask for 09:14:18
2	EXHIBITS:		2	breaks. 09:14:21
3	24 Particle 1 M2001 1.250 Gamma	117	3	A. Okay. 09:14:21
4	25 Particle 2 M2001 1.250 Gamma	117	4	Q. Given that English is not your first 09:14:21
5	26 Particle 3 M2001 1.250 Gamma	117	5	language -- 09:14:26
6	27 Particle 1 M2001 1.550 CSDS Alpha	120	6	A. No. 09:14:27
7	28 Particle 3 M2001 1.550 CSDS Alpha	122	7	Q. -- if there is anything challenging 09:14:28
8	30 Image 1.55 Glass CSDS 1.550	157	8	about what I am asking, please don't hesitate to 09:14:30
9	31 William Longo's Report dated October 9, 2023	171	9	utilize the interpreter. If you don't understand 09:14:33
10	32 Section 5 of Report dated October 9, 2023	171	10	something, please ask me to -- 09:14:36
11	33 PLM Analysis of Talc/Chrysotile Bundle	182	11	A. Thanks for understanding. 09:14:38
12	Intergrowths		12	Q. I can ask terrible questions. Mr. 09:14:39
13			13	Hynes knows that. 09:14:42
14	*****		14	You -- how old are you today? 09:14:44
15			15	A. I'm -- I will be 84 the end of the 09:14:47
16			16	year by November. 09:14:55
17			17	Q. You're joking? 09:14:56
18			18	A. I was born in 1940, November. 09:14:57
19			19	Q. Wow. You look great. 09:15:00
20			20	A. Thank you. Thank you. 09:15:03
21			21	MR. PLACITELLA: 84 I ask what you're 09:15:07
22			22	doing here. 09:15:09
23			23	Q. You what born in China, correct? 09:15:10
24			24	A. Yes. 09:15:12
		Page 7		Page 9
1	YING SHI, Mandarin Interpreter,		1	Q. Where regionally in China? 09:15:12
2	after having been duly sworn to interpret when		2	A. In the southwest. 09:15:15
3	requested.		3	Q. Southwest? 09:15:17
4	SHU-CHUN SU,		4	A. Southwest. The area called Chongqing. 09:15:18
5	after having been duly sworn, testified in English		5	It's a Sichuan province, used to be but later that 09:15:22
6	as follows:		6	city was I think changed into the direct city under 09:15:26
7	EXAMINATION		7	central government which elevate status to like a 09:15:33
8	BY MR. BRALY:		8	province like a state. 09:15:38
9	Q. Good morning, Dr. Su. 09:13:43		9	Q. Okay. You went to college in China 09:15:40
10	A. Good morning. 09:13:44		10	originally, correct? 09:15:46
11	Q. It's nice to meet you. 09:13:45		11	A. Yes. 09:15:47
12	A. Nice to meet you too. Last time we 09:13:48		12	Q. I saw a reference to postgraduate 09:15:48
13	chatted was last May. 09:13:50		13	work done at the University of Moscow. Is that 09:15:54
14	Q. Right. You know, I've had a chance 09:13:53		14	the -- 09:15:58
15	to read your publications to kind of study your 09:13:55		15	A. No, no. What I meant here, you see I 09:15:58
16	career a little bit, and I know that you've done a 09:13:59		16	went to college in 1957, so at that time, China and 09:16:03
17	lot for the microscopy community and for the science 09:14:04		17	Russia still in honeymoon, but later they broke from 09:16:11
18	community. I appreciate your spending the time to 09:14:06		18	each other. So at that time, the Peking University 09:16:15
19	be here with us. 09:14:09		19	which attended was consider the premium university 09:16:21
20	A. Thank you. 09:14:11		20	in China. So the government says since the Moscow 09:16:25
21	Q. Have you ever given a deposition 09:14:11		21	University science program, they are six-year 09:16:32
22	before? 09:14:13		22	instead of a four year, we should follow that. 09:16:38
23	A. Never. 09:14:13		23	Therefore, my undergrad program it take six years 09:16:43
24	Q. I have a lot of ground to cover. 09:14:13		24	although the degree is only a bachelor. 09:16:47

		Page 10	Page 12
1	Q. I understand. I was asking because	09:16:50	1 A. Bear, Delaware. 09:19:43
2	the University of Idaho is in Moscow, Idaho.	09:16:54	2 (Reporter asks for clarification.) 09:19:43
3	A. That's right.	09:17:00	3 THE WITNESS: B-e-a-r, that's next to
4	Q. So I didn't know if you had ever	09:17:03	4 Newark. 09:19:45
5	attended school at Moscow Idaho, which is --	09:17:05	5 Q. Okay. I didn't know there was a
6	A. I'm sorry. I thought Moscow in	09:17:09	6 Newark, Delaware, so Bear is completely new to me. 09:19:51
7	Russia.	09:17:13	7 A. Yes. 09:19:58
8	Q. Well, I was looking to clarify that.	09:17:13	8 Q. Do you live in Delaware? 09:19:59
9	A. Okay.	09:17:17	9 A. Yes. 09:20:00
10	Q. I appreciate it. All right. When	09:17:17	10 Q. Okay. This sounds like a trap
11	did you -- when did you come to the United States	09:17:33	11 question or something. It's not, I promise you. I
12	for the first time?	09:17:36	12 am curious. 09:20:09
13	A. 1981.	09:17:38	13 What is your immigration status? 09:20:12
14	Q. 1981?	09:17:40	14 A. I'm an American citizen. 09:20:14
15	A. Summer.	09:17:41	15 Q. You are, okay. When did you get
16	Q. This was after you earned your	09:17:42	16 naturalized as an American citizen? 09:20:19
17	master's in science in mineralogy at The Institute	09:17:45	17 A. I guess after work at Hercules. I
18	of Geology Sand Geophysics at the Chinese Academy of	09:17:49	18 start working for Hercules in 1987, but at that time
19	Sciences?	09:17:53	19 I was still -- I was at a green card. However, my
20	A. Yes.	09:17:53	20 job, I have to travel. Hercules multination
21	Q. All right. In 1981, did you -- is	09:17:54	21 company. We have about six, 70 plus facilities in
22	that when you started working with Professor Donald	09:18:00	22 Europe, so I had to travel to Europe. The company
23	Bloss and Paul Ribbe?	09:18:04	23 said we can do the visa for you. However, it takes
24	A. Yes.	09:18:05	24 time. However, you already here for so many years,
		Page 11	Page 13
1	Q. Okay. That was at --	09:18:06	1 you're eligible to be naturalized. Then it makes
2	A. Actually 1981, because it was the	09:18:07	2 your travel to work easier. So then, I was
3	sabbatical year of Donald Bloss, so actually he got	09:18:13	3 naturalized in 1995. In, let me see, eight years
4	the chair professor in University of New Mexico in	09:18:19	4 after I work for Hercules.
5	Albuquerque. So I joined him directly first in	09:18:24	5 Q. Do you -- you have a series of
6	Albuquerque during his sabbatical. Then the next	09:18:30	6 publications going back. I think the earliest one
7	year we move back to Virginia Tech.	09:18:35	7 that I have is an article that you wrote or coauthor
8	Q. Okay. You completed your PhD program	09:18:38	8 on with Professor Bloss and Mickey Gunter from 1983
9	in geology and mineralogy in 1985?	09:18:45	9 called "Gladstone-Dale Constants; a New Approach."
10	A. Actually, it was in '84. However, I	09:18:49	10 A. Mm-hmm, yes.
11	attended the '85 graduation, the commencement, yeah.	09:18:54	11 Q. You're familiar with this article?
12	Q. You did your postdoctoral research...	09:19:01	12 A. Yeah.
13	A. After my PhD.	09:19:10	13 Q. I don't need to mark this article.
14	Q. I understand. Okay. Tell me about	09:19:11	14 I'm just -- is this the first time that your name
15	the -- do you have a lab in Delaware? Am I	09:19:17	15 appeared as an author in the peer-reviewed
16	understanding this correctly?	09:19:21	16 literature?
17	A. Now?	09:19:23	17 A. I think earlier than that, because I
18	Q. Yes.	09:19:23	18 listed only articles related to the polarized light
19	A. I have simple equipment, polarized	09:19:25	19 microscopy optical property of minerals. However,
20	light microscope at home. Okay.	09:19:30	20 even when I was in China I published in
21	Q. Okay.	09:19:32	21 peer-reviewed articles.
22	A. But it's not a lab. You can look at	09:19:33	22 Q. Let me come back to you. We need to
23	the same slides or things like that.	09:19:38	23 clarify something for her.
24	Q. Is that in Newark, Delaware or in --	09:19:40	24 (Reporter asks for clarification.)

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1	THE WITNESS: Light microscopy. 09:22:57	1	You were there for his testimony -- quite 09:25:43
2	Q. We did a search for articles that you 09:23:02	2	well-respected with the polarized light microscopy. 09:25:48
3	had authored. I think was the earliest one that we 09:23:08	3	How did you get involved in that specific field? 09:25:51
4	pulled up. 09:23:11	4	What drew you to it? 09:25:54
5	Did you publish articles in China 09:23:12	5	A. Polarized light microscopy? 09:25:56
6	before coming to the United States? 09:23:15	6	Q. Right. 09:26:00
7	A. That's right. 09:23:16	7	A. My first job in China after I 09:26:01
8	Q. Had you published anything related to 09:23:17	8	graduate from the college, I got a job in northwest 09:26:03
9	polarized light microscopy in China before coming to 09:23:20	9	China, which is a geological survey of Gansu 09:26:12
10	the United States? 09:23:25	10	Province. So the structure in China geology is you 09:26:16
11	A. Yes, I did. 09:23:25	11	have a ministry of geology, then have geological 09:26:20
12	Q. You did. Before I ask you about 09:23:27	12	survey in every province. Now, at that time I was 09:26:24
13	that, when did you meet Mickey Gunter? 09:23:33	13	working at central lab of the geological survey of 09:26:30
14	A. 1981, when I arrived at Albuquerque. 09:23:37	14	Gansu Province. The mission of that lab I was in a 09:26:40
15	Because he was in Albuquerque as well with Doug 09:23:42	15	group called rock and mineral identification. China 09:26:43
16	Bloss. That's the first time we met. 09:23:50	16	at that time, they are still doing the grunt 09:26:50
17	Q. In Albuquerque that was part of the 09:23:52	17	geological work, which is the geological mapping. 09:26:55
18	graduate program? 09:23:56	18	The Gansu is a very large province. 09:26:59
19	A. Yes, my PhD program. 09:23:56	19	The field geologists, when they do the mapping, they 09:27:04
20	Q. You and Mickey Gunter, I mean, to 09:24:00	20	collect samples on a grid, like every kilometer or 09:27:09
21	this day you guys have a professional friendship. 09:24:07	21	every 500 meters. So they put a grid, they collect 09:27:15
22	You guys have been friends for a long time? 09:24:10	22	samples, rocks, minerals. So they sent us samples 09:27:22
23	A. Yeah. 09:24:13	23	to our lab for us to identify. The polarized light 09:27:27
24	Q. I have to ask you this: Stories get 09:24:13	24	microscope is the instrument. 09:27:34
Page 15		Page 17	
1	told and everything. I have heard that when you 09:24:20	1	So the rock, we ground the rock. 09:27:37
2	guys were in your graduate program that you lived in 09:24:24	2	There is a lot for to prepare the samples for us. 09:27:40
3	the same building as each other. 09:24:28	3	You grind the rock, cut in small piece, grind that 09:27:45
4	A. That is not true. 09:24:30	4	to 30 microns thick in uniform, and then cover with 09:27:49
5	Q. That is not true. Okay. 09:24:30	5	cover glass with glue. Then you put this on the 09:27:55
6	A. You see Mickey was married. 09:24:32	6	polarized light microscope. Then you identify 09:27:59
7	Q. Yeah. 09:24:34	7	whether it's quartz, it's feldspar, it's muscovite. 09:28:05
8	A. So we lived in different apartment, 09:24:35	8	Anyway, those so-called rock-forming minerals. Of 09:28:13
9	okay. And after he come back from Albuquerque, and 09:24:42	9	course, the ultra basic rock is not uncommon now, 09:28:18
10	she [sic] and his wife, they rent a home, but I only 09:24:50	10	which contains serpentine and chrysotile -- 09:28:21
11	rented apartment in apartment complex. So then we 09:24:56	11	(Reporter asks for clarification.) 09:28:21
12	have never been roommate. I noticed something like 09:25:02	12	THE WITNESS: It's a mineral name, 09:28:35
13	Dr. Longo said we were roommate. No. We were 09:25:06	13	chrysotile, c-h-r-y-s-o-t-y-l-e. 09:28:35
14	office mate. That is inaccurate. And also school 09:25:10	14	MR. HYNES: I-l-e. 09:28:42
15	mate. Okay. 09:25:14	15	A. So, therefore, as I said, I start to 09:28:43
16	Q. Okay. Well, we can correct that 09:25:15	16	use the polarized light microscopy to identify 09:28:46
17	rumor then. 09:25:19	17	rock-forming minerals in 1964. Actually, I've been 09:28:53
18	A. Yeah. Thanks. 09:25:21	18	doing that in China for maybe more than ten years. 09:29:05
19	Q. You guys did work together. You guys 09:25:22	19	Yeah. 09:29:09
20	did your school work together. You were friends. 09:25:24	20	Q. What we are going to be discussing 09:29:13
21	A. That's right. 09:25:29	21	today has to do with a process referred to as 09:29:16
22	Q. And you're still friends? 09:25:29	22	central stop dispersion staining, which am I correct 09:29:20
23	A. Right. 09:25:32	23	that this methodology is something that you 09:29:27
24	Q. You are -- Dr. Longo has said this. 09:25:34	24	developed? 09:29:31

Page 18		Page 20	
1 A. No. Central stop dispersion staining 09:29:32	09:29:32	1 Q. So you have the Pumpkin Book and you 09:33:09	09:33:09
2 was invented by Russia mineralogist in 1930s. It 09:29:37		2 have the Green Book? 09:33:11	09:33:11
3 was I think introduced to China probably 1950s. 09:29:47		3 A. That's right. 09:33:11	09:33:11
4 Okay. And also to the United States I think Dr. 09:29:54		4 Q. All right. 09:33:11	09:33:11
5 McCrone was the pioneer to introduce that method. 09:29:59		5 A. After they come to the states to do 09:33:13	09:33:13
6 Q. We'll talk about it in more detail 09:30:06		6 PhD with Doc Bloss, Professor... Pumpkin Book 09:33:15	09:33:15
7 later. 09:30:09		7 author. 09:33:30	09:33:30
8 A. Okay. 09:30:10		8 Q. Morse? 09:33:30	09:33:30
9 Q. But the -- it's called central stop 09:30:10		9 A. Morse, he was revising his book. It 09:33:32	09:33:32
10 because there is actually a block that blocks the 09:30:13		10 happened the publisher sent his book for me to 09:33:39	09:33:39
11 light that's in the central part of the aperture 09:30:17		11 review. Okay. And when I was reviewing his book, I 09:33:43	09:33:43
12 that allows polarized light to travel around that 09:30:22		12 found there's a part of his textbook, how do you 09:33:53	09:33:53
13 central block. 09:30:24		13 calculate the refract [ph] index from the dispersion 09:34:00	09:34:00
14 A. Actually, I actually brought today an 09:30:25		14 staining color. It's very cumbersome. It's a lot 09:34:06	09:34:06
15 objective central stop, the McCrone. 09:30:31		15 mathematics. Actually so I was actually friends 09:34:11	09:34:11
16 Q. Great. 09:30:34		16 with Professor Morse, so we talk about. I said this 09:34:18	09:34:18
17 A. Yes. There's a small metal disc that 09:30:36		17 shouldn't be that complicated. Okay. 09:34:26	09:34:26
18 the diameter are usually 2 to 3 millimeter in size, 09:30:44		18 Professor Morse used a calculation 09:34:32	09:34:32
19 a circle metal disc at a back focal plane of the 09:30:48		19 and Dr. McCrone used a graphic solution. You plot 09:34:37	09:34:37
20 objective. Yeah. That is called central stop. 09:30:53		20 the dispersion curve of the liquid, and also you 09:34:43	09:34:43
21 Q. And the purpose of this is to prevent 09:30:56		21 plot its dispersion curve of whether it's chrysotile 09:34:50	09:34:50
22 light from passing directly through -- 09:30:59		22 or amosite, whatever. You plot this curve. You 09:34:55	09:34:55
23 A. To block the batching wavelengths. 09:31:03		23 find the intersection where it's so-called matching 09:35:01	09:35:01
24 Q. Okay. 09:31:07		24 wavelengths. Then you graphically solve the refract 09:35:04	09:35:04
Page 19		Page 21	
1 A. Between the liquid and the solid. 09:31:08		1 index for the 589 nanometer wavelengths because that 09:35:11	09:35:11
2 Q. Cool. We'll get more technical about 09:31:13		2 is the standard wavelengths used to describe 09:35:17	09:35:17
3 that later. 09:31:16		3 material refract index. 09:35:23	09:35:23
4 A. Okay. 09:31:17		4 MR. PLACITELLA: Would it make sense 09:35:39	09:35:39
5 Q. There's been something that's been 09:31:18		5 for the two of you to switch? 09:35:41	09:35:41
6 referred to as the "Su Method" of dispersion 09:31:35		6 A. Actually, now, that's why I develop 09:35:53	09:35:53
7 staining for the identification of chrysotile, maybe 09:31:41		7 the so-called equation a simple equation to go from 09:36:00	09:36:00
8 not for chrysotile but for asbestos in samples. 09:31:49		8 the dispersion coefficient of the liquid which is 09:36:07	09:36:07
9 What is your understanding of what the "Su Method" 09:31:54		9 listed on the bottle of the liquid. 09:36:14	09:36:14
10 is and how does this distinguish from normal central 09:31:59		10 Q. Right. 09:36:17	09:36:17
11 stop dispersion staining process? 09:32:05		11 A. And also the dispersion of the 09:36:19	09:36:19
12 MR. HYNES: Form. 09:32:11		12 mineral you have those data in a textbook, in a 09:36:21	09:36:21
13 You can answer. 09:32:11		13 mineralogy book. I used that to the parameter. I 09:36:26	09:36:26
14 A. The Su Method, actually, that was 09:32:12		14 found an analytical relationship between them and 09:36:31	09:36:31
15 named by a professor I think in Amherst University, 09:32:15		15 the wavelength. So that would make the derivation 09:36:36	09:36:36
16 a university in Massachusetts, Stoiber and Morse, 09:32:30		16 of refract index from the dispersion staining color 09:36:45	09:36:45
17 Professor Morse. Because he is a very famous, like, 09:32:32		17 a lot easier -- 09:36:50	09:36:50
18 mineralogist. When he wrote -- his textbook as been 09:32:38		18 Q. And then -- I'm sorry. 09:36:52	09:36:52
19 widely used in the geology department. They called 09:32:46		19 A. Then Professor Morse, he revised that 09:36:54	09:36:54
20 it Pumpkin Book because the book is pumpkin color 09:32:51		20 chapter of his book and he used my material. He is 09:37:00	09:37:00
21 Dr. Green is Green Book. Professor... 09:33:01		21 the first man call it Su Method. So Su Method is 09:37:08	09:37:08
22 Q. Morse? 09:33:04		22 not just for the asbestos identification; it is for 09:37:13	09:37:13
23 A. Morse book people call it Pumpkin 09:33:05		23 deriving the numerical value of refract index, from 09:37:18	09:37:18
24 Book. 09:33:08		24 the dispersion staining color. 09:37:23	09:37:23

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1 Q. Okay. And the steps involved in this 09:37:27 2 involve the interaction between wavelength and 09:37:31 3 refractive index values based on the temperature of 09:37:36 4 what's being sampled at that time? 09:37:40	1 that you authored in 2022 titled "Talc Misidentified 09:40:40 2 As Chrysotile, a Review of MSS 71134 and 71376 Talc 09:40:47 3 Analysis of Gold Bond Medicated Powder dated 09:40:57 4 January 30, 2022." 09:41:03 5 (Exhibit 4 Talc Misidentified As Chrysotile, 09:40:46 6 a Review of MSS 71134 and 71376 Talc Analysis of 09:40:48 7 Gold Bond Medicated Powder dated January 30, 2022 09:40:58 8 marked for identification.) 09:41:05 9 You're familiar with this -- 09:41:05
5 A. Yeah. The temperature, actually the 09:37:42 6 reason the temperature is considered because the 09:37:45 7 liquid is sensitive -- its refract index is 09:37:50 8 sensitive to the temperature. Therefore, the effect 09:38:05 9 is on the fourth decimal place, about usually around 09:38:11 10 .0005. So each fluctuates of 2 centigrade degree 09:38:17 11 will change one unit in the third decimal place. 09:38:24 12 Then it matters. 09:38:29	10 A. Yes. 09:41:06 11 Q. -- publication too? 09:41:07 12 A. Yes. It's not publication. It's 09:41:08 13 just a review. 09:41:10 14 Q. Thank you. That's correct. I did 09:41:11 15 misspeak on that. 09:41:16 16 That publication I believe was the 09:41:16 17 first time that you had signed your name to any 09:41:19 18 report involving a litigation-type matter; is that 09:41:24 19 right? 09:41:24
13 Q. Okay. Okay. We will have plenty of 09:38:31 14 time to talk about that more. 09:38:42	20 A. I think so. But at that time I 09:41:31 21 didn't even understand the nature of the report 09:41:32 22 before me. It's just a report about analysis of the 09:41:46 23 asbestos. 09:41:52
15 A. Okay. 09:38:44	24 Q. Right. Before this report, 09:41:53
16 Q. I want to I suppose go through some 09:38:44 17 of the legal, legal part of this. 09:38:48	
18 You are here because of -- that 09:38:54 19 didn't work the way I wanted it to. You're here 09:39:00 20 because of a lawsuit filed here in New Jersey called 09:39:11 21 Kayme Clark and also because of the ongoing 09:39:19 22 litigation in what's referred to as the 09:39:23 23 multidistrict litigation related to the ovarian 09:39:25 24 cancer cases. Do you understand that? 09:39:31	
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1 A. Yes. 09:39:33	1 Exhibit 4, which is from 2022, you did have prior 09:42:01
2 Q. Okay. There are a couple of exhibits 09:39:34 3 that I'm going to start building out for this 09:39:37 4 deposition. The first two exhibits; Exhibit 1, is 09:39:40 5 just the notice of deposition for the Kayme Clark 09:39:43 6 case. 09:39:49 7 (Exhibit 1 Clark Third Amended Notice of 09:39:51 8 Deposition marked for identification.) 09:39:53	2 involvement with MAS and Dr. Longo's laboratory in 09:42:10 3 Georgia, right? 09:42:14 4 A. Yes. 09:42:15 5 Q. You served as an NVLAP or NVLAP 09:42:15 6 auditor, correct? 09:42:26 7 A. Yes. 09:42:27 8 Q. Did you know Dr. Longo personally 09:42:28 9 before this report? 09:42:33
9 Q. Exhibit 2 is going to be the notice 09:39:53 10 of deposition for the MDL, both for today. I don't 09:40:07 11 really have I don't think any questions about those 09:40:12 12 documents specifically. 09:40:15 13 (Exhibit 2 PSC 2nd Amended Deposition Notice 09:40:15 14 of Shu-Chun Su marked for identification.) 09:40:21	10 A. You see, I did the on-site assessment 09:42:37 11 of an MAS in 2015. That's the first time I met Dr. 09:42:42 12 Longo. Because after the assessment, I think we 09:42:51 13 talked briefly before I left. That's only time we 09:42:56 14 talked before the -- before this, this review. 09:43:04
15 Q. Exhibit 3 is the report that you 09:40:21 16 issued dated May 21st of 2024. I believe that's the 09:40:23 17 document that's directly in front of you. 09:40:28	15 Q. Before you saw him in the courthouse 09:43:09 16 in May? 09:43:11
18 A. Yep. 09:40:30	17 A. That's right. 09:43:12
19 Q. Great. I'm sure you have gathered we 09:40:30 20 will be talking about this document. 09:40:33	18 Q. Do you recall being at MAS before 09:43:13 19 2015? 09:43:23
21 A. Okay. 09:40:34	20 A. The name? 09:43:24
22 (Exhibit 3 Report dated May 21, 2024 marked 09:40:34 23 for identification.) 09:40:38	21 Q. The lab, MAS. 09:43:25
24 Q. Exhibit 4 is going to be a report 09:40:38	22 A. Yeah, yeah, yeah. 09:43:27
	23 Q. You didn't meet Dr. Longo until 2015? 09:43:28
	24 A. That's right, until I visit the lab. 09:43:32

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1	But I heard about that lab, 'cause, as you know, the 09:43:35	1	A. That document says that, but at that 09:48:21
2	NVLAP, I am one of the technical expert for NVLAP. 09:43:40	2	time I was not aware of the litigation, you see. 09:48:26
3	So we now probably pretty much the laboratory in the 09:43:45	3	Q. Right. That's kind of what I was 09:48:31
4	United States, so MAS is one of them. 09:43:49	4	getting at. Dr. Gunter was the person who brought 09:48:34
5	Q. You may not -- you may just not 09:43:55	5	this issue to your attention, right? 09:48:37
6	recall this. We can mark this as Exhibit 5. I am 09:43:58	6	A. Correct. 09:48:40
7	going to do all my exhibits electronically. We 09:44:01	7	Q. You and Dr. Gunter -- there was a 09:48:40
8	don't need to sticker this. I will provide the 09:44:04	8	criticism about this report, Exhibit 4, that you may 09:48:50
9	documents electronically. 09:44:08	9	not have written Exhibit 4, this report. You're 09:48:56
10	(Exhibit 5 2006 Accreditation Sheet Or 09:44:10	10	familiar with that criticism, correct? 09:49:01
11	Report For Material Analytical Services marked for 09:46:14	11	A. Which criticism? 09:49:03
12	identification.) 09:44:49	12	Q. The criticism that you did not 09:49:05
13	Q. I just need to mark this. I don't 09:44:49	13	actually write this report. You're aware of that 09:49:06
14	have any detailed questions about this document 09:45:10	14	criticism? 09:49:10
15	right now other than, were you aware or did you 09:45:13	15	A. Yes. 09:49:10
16	just -- I mean, I know it's been a long time, but 09:45:24	16	Q. And you and Dr. Gunter got together 09:49:11
17	did you just not recall being present at MAS as far 09:45:27	17	and shot a short video where you said that, no, I 09:49:14
18	back as December of 2006? 09:45:32	18	did, in fact, this is my report? 09:49:18
19	A. I forgot. 09:45:35	19	A. Yeah. 09:49:20
20	Q. No problem. I may ask you about that 09:45:36	20	Q. Did Dr. Gunter write this report and 09:49:20
21	later. I may later. 09:45:45	21	then ask you to review it for whether or not it was 09:49:27
22	MR. BRALY: Exhibit 5 is a 2006 09:46:06	22	in conformance with your opinions? 09:49:31
23	accreditation sheet or report for material 09:46:10	23	A. No, not at all. Not at all. 09:49:33
24	analytical services. That's what it is. 09:46:16	24	Q. This report from 2022 is your 09:49:36
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1	Q. Dr. Su, just one additional question, 09:46:42	1	authorship. You typed this out? 09:49:40
2	if your name appears as the assessor's name at 09:46:45	2	A. Yeah. 09:49:43
3	the -- in that document, does that mean that you 09:46:49	3	Q. Okay. 09:49:43
4	personally did the assessment of the lab? 09:46:51	4	A. Yes. 09:49:45
5	A. Yes, I did. 09:46:54	5	Q. For Exhibit 3 -- in Exhibit 3 is your 09:49:46
6	Q. Okay. You can set that aside. We 09:46:55	6	report in this case. It's the one that you have in 09:49:56
7	may come back to that. 09:46:58	7	front of you. 09:49:58
8	A. Okay. 09:47:00	8	A. Mm-hmm. 09:50:00
9	Q. The report that is Exhibit 4, it says 09:47:01	9	Q. There is a PowerPoint section. It's 09:50:00
10	at the very beginning of this -- you see it on the 09:47:12	10	Appendix C. 09:50:03
11	screen here that Dr. Gunter had asked you to do -- 09:47:15	11	A. Yes. 09:50:05
12	conduct the analysis of the materials, correct? 09:47:21	12	Q. Who created that PowerPoint? 09:50:06
13	A. Mm-hmm, yes. 09:47:24	13	A. Myself entirely. 09:50:08
14	Q. Did Dr. Gunter, was he the first 09:47:27	14	Q. Entirely? 09:50:10
15	person to bring to your attention that Dr. Longo was 09:47:30	15	A. Yeah. 09:50:11
16	using polarized light dispersion staining to 09:47:35	16	Q. Okay. 09:50:11
17	identify chrysotile and talc samples? 09:47:40	17	A. It takes lot of time and effort. 09:50:12
18	A. No. Because at the lab when I do the 09:47:45	18	Q. Oh, I know it does. My dad is 83. 09:50:14
19	assessment, I will check the -- there are two 09:47:48	19	He can barely turn on a computer. I'm impressed. 09:50:18
20	program, PLM and TM. So the PLM is dispersion 09:47:53	20	MR. PLACITELLA: My dad is 98 and he 09:50:22
21	staining. 09:48:00	21	is very good in turning on a computer. 09:50:24
22	Q. Was Dr. Gunter -- did Dr. Gunter 09:48:01	22	MR. BRALY: You should take some tips 09:50:28
23	bring to your attention that Dr. Longo was finding 09:48:06	23	from him. 09:50:30
24	chrysotile in cosmetic talc samples by PLM? 09:48:12	24	BY MR. BRALY: 09:50:32

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1	Q. Okay. So the Exhibit C, the	09:50:33	1	A. Yeah.	09:54:29
2	PowerPoint that you developed that you put that	09:50:37	2	Q. Perfect. The Bloss symposium where	09:54:30
3	together yourself?	09:50:40	3	Dr. Gunter introduced you to Matt Sanchez, when was	09:54:34
4	A. Yes.	09:50:40	4	that?	09:54:37
5	Q. Okay. Did Dr. Gunter have any input	09:50:43	5	A. 2012 or -- I don't remember exact	09:54:42
6	or any involvement with the development of the	09:51:05	6	year.	09:54:49
7	report that's in front of you now, which is	09:51:09	7	Q. When did you first come to know that	09:54:52
8	Exhibit 3?	09:51:12	8	Matt Sanchez serves as an expert witness for Johnson	09:54:56
9	A. Not at all. I did not talk with him	09:51:12	9	& Johnson in litigation-related matters?	09:55:03
10	during this period. I never told him, like, I'm	09:51:19	10	A. I think until this year I start get	09:55:07
11	working on something. Okay.	09:51:26	11	involved. I didn't know that before.	09:55:14
12	Q. When you say during this period, do	09:51:28	12	Q. Okay. Did you know if Matt Sanchez	09:55:17
13	you mean during the period that you created the	09:51:30	13	was involved with expert consulting or testifying	09:55:20
14	Exhibit 3 PowerPoint?	09:51:34	14	work for anybody before this year, 2024?	09:55:25
15	A. Yes.	09:51:35	15	A. I wasn't aware.	09:55:29
16	Q. Yes, okay. When was the last time	09:51:36	16	Q. When you met Bryan Bandli in Chicago,	09:55:32
17	that you talked with Dr. Gunter?	09:51:39	17	did Dr. Gunter introduce you to him as well?	09:55:47
18	A. That should be maybe months or more	09:51:47	18	A. Yes.	09:55:51
19	ago. Yes, that would be the last time we talked.	09:51:55	19	Q. Okay. When did that occur? What	09:55:51
20	Q. Are you saying months ago?	09:52:02	20	year?	09:55:57
21	A. Months or more ago.	09:52:03	21	A. Let me see my... I should be able to	09:55:58
22	Q. Months or more, okay. You are	09:52:05	22	find out from -- because I listed that on a training	09:56:02
23	acquainted with Dr. Matt Sanchez and Dr. Bryan	09:52:08	23	course I conducted. Let me see my... 1986 -- no.	09:56:10
24	Bandli?	09:52:19	24	That's Virginia Tech. That is not Chicago. Let me	09:56:29
		Page 31	Page 33		
1	A. Yes.	09:52:19	1	see.	09:56:34
2	Q. When did you first meet Dr. Sanchez	09:52:20	2	Q. Can I make a suggestion? At page --	09:57:31
3	or Dr. Bandli?	09:52:24	3	it's the 14th overall page but page two of your	09:57:36
4	A. I believe it was in two thousand -- I	09:52:26	4	references, there is an entry here -- if you look at	09:57:39
5	forget the year. The first time we met, Sanchez, it	09:52:37	5	the screen -- for 2004 where it's Dr. Gunter, Bryan	09:57:43
6	was last symposium of The Geological Society of	09:52:42	6	Bandli, Dr. Bloss talking about how to build a	09:57:48
7	America annual meeting. They have a special	09:52:50	7	spindle stage. This looks just inferentially kind	09:57:52
8	symposium on Dr. Bloss, the contribution. So I	09:53:00	8	of like what you're talking about, sort of.	09:57:58
9	remember of course Dr. Gunter was there and Matt	09:53:10	9	A. This paper resulted from that McCrone	09:58:05
10	Sanchez was there.	09:53:18	10	course.	09:58:10
11	Q. Did Dr. Gunter introduce you to Matt	09:53:19	11	Q. Perfect. You first met Bryan Bandli	09:58:10
12	Sanchez?	09:53:23	12	sometime --	09:58:14
13	A. Yes.	09:53:23	13	A. Before --	09:58:15
14	Q. Are you aware of the relationship	09:53:24	14	Q. -- before 2004?	09:58:16
15	between Dr. Gunter and Matt Sanchez and Bryan	09:53:26	15	A. Yeah.	09:58:20
16	Bandli?	09:53:31	16	Q. Is that fair?	09:58:21
17	A. That's right, I am fully aware.	09:53:35	17	MR. HYNES: For clarification go to	09:58:22
18	Actually, I met Dr. Bryan in Chicago because McCrone	09:53:38	18	page four, it's the second entry on page four.	09:58:23
19	Research Institute host a course about spindle	09:53:47	19	THE WITNESS: Yeah, that was the	09:58:34
20	stage. So I was one of the instructors. Dr. Gunter	09:54:03	20	short course.	09:58:36
21	also brought, brought Dr. Bryan. I believe he was	09:54:08	21	Q. Okay. 2003?	09:58:37
22	doing his PhD with him at that period. So he came	09:54:14	22	A. Yeah.	09:58:40
23	also to Chicago. That's the first time I met Bryan.	09:54:19	23	Q. Okay. Are you aware that Matt	09:58:41
24	Q. And Dr. Bryan is Bryan Bandli?	09:54:24	24	Sanchez and Bryan Bandli had both been students of	09:58:46

		Page 34	Page 36
1	Mickey Gunter?	09:58:52	1 May 30th? 10:01:44
2	A. Yes.	09:58:53	2 A. Yes. 10:01:47
3	Q. Yes. Had you maintained a working relationship with either Matt Sanchez or Bryan Bandli after meeting them, meaning did you correspond with them or did you work collaboratively on papers?	09:58:53 09:59:00 09:59:05 09:59:09 09:59:13	3 Q. You were present for that? 10:01:48
4			4 A. Yes. 10:01:49
5			5 Q. Right. So prior to the hearing on May 30th, you had not conducted any analysis on Calidria or samples identify as Calidria yourself, correct?
6			6 10:01:55 10:02:00 10:02:05
7			7 Calidria or samples identify as Calidria yourself, 10:02:00
8	A. No.	09:59:14	8 correct? 10:02:05
9	Q. After -- so you provided to me, and to Mr. Placitella, information including correspondence between yourself and Matt Sanchez, and between yourself and Ann Wylie?	09:59:14 09:59:47 09:59:53 09:59:57	9 A. No. 10:02:05
10			10 Q. Do you know where Matt Sanchez acquired this Calidria material that he had? 10:02:11
11			11 A. I believe it was from Mickey Gunter, 10:02:17
12			12 Dr. Gunter. 10:02:22
13	A. Yes.	10:00:00	13 Q. Did you ever review Dr. Gunter's PLM analysis of Calidria? 10:02:24
14	Q. Yes?	10:00:02	14 A. No. 10:02:28
15	A. What's on the screen right now is a collection of seven pages. I am going to go through some of these. They are in chronological order.	10:00:03 10:00:05 10:00:08	15 Q. Are you aware that Dr. Gunter did an analysis of Calidria? 10:02:31
16			16 A. Yeah, I'm aware, but I want -- I am not interested in other people's analysis. I want to see myself. Okay.
17			17 Q. Right. Okay. Are you aware that Dr. Gunter testified that his analysis of Calidria produced central stop dispersion staining colors
18	The first one is -- by the way, this is Exhibit 6.	10:00:11 10:00:14	18 10:02:36
19			19 10:02:39
20	(Exhibit 6 Series of Emails marked for identification.)	10:00:15 10:00:16	20 10:02:42
21			21 10:02:45
22	Q. The first one is dated May 23, 2024, at very early in the morning. What were you doing at 3:37 a.m.?	10:00:16 10:00:22 10:00:24	22 Q. Right. Okay. Are you aware that Dr. Gunter testified that his analysis of Calidria produced central stop dispersion staining colors
23			23 10:02:48 10:02:59
24			24 10:03:03
		Page 35	Page 37
1	A. I woke up probably early.	10:00:27	1 similar to Dr. Longo's analysis of Calidria? 10:03:07
2	MR. HYNES: Clarifying I think timestamp on these emails is Chinese --	10:00:31 10:00:34	2 MR. HYNES: Objection. Assumes facts, misstates testimony. 10:03:12 10:03:14
3			3 A. I wasn't aware of any testimony in May. 10:03:14 10:03:17
4	THE WITNESS: I was in the States last May. No, no. That's right. The May 23rd, I was in China.	10:00:39 10:00:40 10:00:45	4 Q. The next message in Exhibit 6 is from May 23rd -- I said these were chronological. They are -- is from May 23rd. There is a response from Matt Sanchez that is not included here. It says, quote, text hidden. Do you see that?
5			5 10:03:23 10:03:28 10:03:31 10:03:35 10:03:39
6			6 Q. Do you know what Dr. Sanchez wrote back to you?
7	Q. Okay.	10:00:47	7 10:03:43
8	A. Now I recall. I came back on the 27th.	10:00:48 10:00:52	8 10:03:46
9			9 A. Oh, yes. He said I will, I will make sure it arrived before May 27th. So I said thank you. Okay.
10	MR. PLACITELLA: You're not as crazy as I am.	10:00:53 10:00:55	10 10:03:47 10:03:50 10:03:55
11			11 Q. Okay. The next correspondence that was produced to me is from June 11, 2024, at 10:51 a.m.
12	Q. Regardless, the question that you were asking Dr. Sanchez was whether or not he could send a gram or less of the two Calidria chrysotiles to me at your office in Bear, Delaware. Do you see that?	10:00:57 10:01:02 10:01:06 10:01:11 10:01:16	12 10:04:01
13			13 10:04:08
14			14 A. Mm-hmm.
15			15 Q. This is from Dr. Sanchez to you
16			16 discussing a call that is happening that day.
17	A. Yes.	10:01:16	17 A. Yeah.
18	Q. [Reading] It would be great if they can be delivered no later than 5/27.	10:01:16 10:01:20	18 10:04:09
19			19 Q. Okay. And Bryan in this context is
20	A. That's the date I came back from China.	10:01:23 10:01:26	20 10:04:17
21			21 10:04:13
22	Q. All right. And then you're aware that Dr. Longo's first day of hearing in the Clark case relative to his PLM procedure began on	10:01:27 10:01:32 10:01:40	22 10:04:17
23			23 10:04:17
24			24 10:04:17

		Page 38	Page 40
1	Bryan Bandli?	10:04:21	1 Pittsburgh on the 14th of June, two days after this 10:06:34
2	A. Yes.	10:04:22	2 meeting because we were discussing what I want to 10:06:40
3	Q. This occurred after Dr. Longo had	10:04:26	3 do, what kind of sample I want analyzed. So after 10:06:45
4	completed his testimony about his PLM analysis --	10:04:30	4 this written communication, I met him in Pittsburgh. 10:06:52
5	A. Yes.	10:04:30	5 Okay. 10:07:00
6	Q. -- in the court case with Judge	10:04:35	6 Q. My question was, all of the 10:07:01
7	Viscomi?	10:04:38	7 conversations between you and Dr. Sanchez and Dr. 10:07:04
8	MR. HYNES: Wait for him to finish	10:04:42	8 Bandli after June 12th have been either face-to-face 10:07:07
9	the question. Hang on. Give him a second to make	10:04:43	9 or by video conference or on the phone? 10:07:13
10	sure the question is through and then respond. Not	10:04:46	10 A. Correct. 10:07:16
11	in the middle of the question. It's okay.	10:04:48	11 Q. Did somebody tell you not to 10:07:17
12	THE WITNESS: Okay.	10:04:50	12 communicate in writing with Dr. Sanchez? 10:07:19
13	MR. BRALY: People can do this for	10:04:51	13 A. No, no. Because we see each other, 10:07:22
14	years and get that wrong. It's -- this is	10:04:52	14 there is no need to communicate in writing. Okay. 10:07:26
15	conversational, but it's not a conversation, if that	10:04:56	15 Q. Hold on a second. I am going to have 10:07:54
16	makes sense.	10:05:00	16 to do just a little bit of mechanical tinkering with 10:07:57
17	MR. HYNES: She can't take down two	10:05:01	17 this. 10:08:00
18	people speaking at once.	10:05:03	18 MR. HYNES: Good time for a quick 10:08:00
19	BY MR. BRALY:	10:05:06	19 break? 10:08:02
20	Q. The next correspondence that we have	10:05:06	20 MR. BRALY: Yeah, let me ask a 10:08:03
21	from Exhibit 6 is the same date, couple minutes	10:05:09	21 question and we can do that. I agree with you. 10:08:04
22	later where you just respond and say yeah, 12 is	10:05:12	22 It's a PowerPoint. I just have to export it as a 10:08:08
23	fine, right?	10:05:16	23 pdf. This will be Exhibit 7. 10:08:12
24	A. Correct.	10:05:17	24 (Exhibit 7 Pittsburgh Work Plan marked for 10:08:27
		Page 39	Page 41
1	Q. Apparently at 12 you guys had a	10:05:19	1 identification.) 10:08:27
2	meeting and then at 1:46 p.m. you said please see	10:05:23	2 Q. This is the supposed Pittsburgh Work 10:08:27
3	the attachment.	10:05:30	3 Plan that you had attached to that email to Dr. 10:08:31
4	A. Yes.	10:05:30	4 Sanchez and Dr. Bandli, correct? 10:08:35
5	Q. What was attached is a file dated	10:05:30	5 A. Correct. 10:08:37
6	June 7, 2024, called the Pittsburgh Work Plan. Do	10:05:36	6 Q. This work plan is a two-page document 10:08:37
7	you see that?	10:05:40	7 that includes steps that you wanted to take -- what 10:08:43
8	A. Yes.	10:05:40	8 does it include? I shouldn't presume. You tell me, 10:08:49
9	Q. Okay. This is the next page. It's	10:05:40	9 what were you doing here? 10:08:53
10	not something I need to ask you about.	10:05:49	10 A. Yes. Because RJ Lee Group, they have 10:08:56
11	Then the last email that I have is	10:05:53	11 a Leica DM 2700 P polarized light microscope which 10:09:12
12	from June 12, 12:47 p.m. that says [Reading] I have	10:05:56	12 Dr. Longo has. So what I plan to do is to use the 10:09:22
13	the link now. No resend is necessary.	10:06:01	13 same microscope to analyze the samples in question 10:09:29
14	Do you see that?	10:06:05	14 to verify my MDL report. Okay. Because when I 10:09:39
15	A. Yes.	10:06:05	15 wrote MDL report was based on the data of MS report. 10:09:45
16	Q. Is that the last correspondence that	10:06:05	16 But I'm confident my analysis of this report is 10:09:53
17	you had in writing with either Matt Sanchez or Bryan	10:06:08	17 correct. However, since I have a chance to use the 10:09:59
18	Bandli?	10:06:12	18 same instrument, I want to produce my own work to 10:10:05
19	A. I believe so.	10:06:13	19 prove my opinion in my MDL report. 10:10:13
20	Q. Okay. The remainder of the	10:06:14	20 MR. BRALY: Would you like to take a 10:10:20
21	conversations or communications between you and Mr.	10:06:18	21 break? 10:10:21
22	Sanchez and Mr. Bandli have been by phone or by	10:06:22	22 MR. HYNES: Yeah. Why don't we take 10:10:21
23	video, correct?	10:06:26	23 five minutes. 10:10:23
24	A. You see, I went to RJ Lee in	10:06:28	24 THE WITNESS: Okay. 10:10:24

SHU-CHUN SU, PhD

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1	(A break was taken.)	10:28:01	1	Q. Had you ever spoken to Mr. Hynes	10:30:44
2	BY MR. BRALY:	10:28:24	2	before March or February of this year?	10:30:47
3	Q. Welcome back, Dr. Su.	10:28:24	3	A. No. We first met in Wilmington,	10:30:51
4	A. Thank you.	10:28:27	4	Delaware, Wilmington, Delaware. We did not speak	10:31:02
5	Q. I've marked Exhibit 8. Exhibit 8 is	10:28:28	5	before that.	10:31:07
6	two emails. Show you the second one, the second	10:28:32	6	Q. Well, how did you come to meet?	10:31:09
7	page.	10:28:37	7	A. I think I was introduced by attorney	10:31:13
8	(Exhibit 8 Two Emails marked for	10:28:37	8	Kurt Grieves.	10:31:21
9	identification.)	10:28:38	9	Q. I am not sure. Grieves?	10:31:23
10	Q. It should be on the monitor in front	10:28:38	10	A. Grieves.	10:31:24
11	of you. The first one is dated March 5, 2024, from	10:28:40	11	MR. HYNES: Greve, G-r-e-v-e.	10:31:25
12	an individual named Michael Douglas, whose signature	10:28:45	12	MR. BRALY: Thank you.	10:31:28
13	file indicates that he is an attorney at King &	10:28:47	13	BY MR. BRALY:	10:31:30
14	Spalding. Do you see that?	10:28:53	14	Q. Is Attorney Greve, is he -- do you	10:31:30
15	A. Yes.	10:28:53	15	know who he works for?	10:31:34
16	Q. It is asking you if you are amenable	10:28:53	16	A. I know. American International --	10:31:35
17	to retention in the Kayme and Dustin Clark case. Do	10:28:56	17	AII.	10:31:41
18	you see that?	10:29:00	18	Q. Okay. This may be -- this may be a	10:31:41
19	A. Yes, I see.	10:29:00	19	technical question so if you don't know the answer	10:31:49
20	Q. The second email is also from Mr.	10:29:01	20	to this, that's fine.	10:31:51
21	Douglas, same -- oh, it's to a distribution list	10:29:03	21	Do you know if he works for AII or if	10:31:53
22	called J&J talc expert as well, asking if you're	10:29:11	22	he is a lawyer for AII?	10:31:56
23	amenable to retention in the ovarian MDL group.	10:29:17	23	A. I believe he works.	10:31:59
24	This one is dated Friday, April 5, 2024. Do you see	10:29:23	24	Q. Okay. Have you ever met an	10:32:02
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1	that?	10:29:27	1	individual named Robert Faxon?	10:32:05
2	A. I saw that.	10:29:27	2	A. I don't remember. I don't remember.	10:32:10
3	Q. Okay. Do you have any return email	10:29:28	3	I am not very good in names.	10:32:22
4	from you back to Mr. Douglas accepting these offers?	10:29:31	4	Q. He is a lawyer. Heavy southern	10:32:25
5	A. I remember I replied by yes.	10:29:37	5	drawl, accent, bald.	10:32:32
6	Q. Did you ever -- you are on a	10:29:43	6	A. Let me see.	10:32:39
7	retention agreement that pays you \$800 an hour,	10:29:53	7	Q. It's all right if you don't remember.	10:32:40
8	correct?	10:29:56	8	A. Yeah.	10:32:42
9	A. Correct.	10:29:56	9	Q. If you don't remember, that's fine.	10:32:43
10	Q. Before March 5th of 2024, which is	10:29:57	10	A. Okay.	10:32:45
11	when this first document is dated, who initially	10:30:05	11	Q. Do you know Mr. Greve through your	10:32:45
12	approached you on behalf of Johnson & Johnson asking	10:30:10	12	prior work from that report that we looked at	10:32:52
13	about your availability to be an expert witness for	10:30:15	13	previously --	10:32:55
14	them?	10:30:18	14	A. For Golden Bond Baby Powder.	10:32:56
15	A. Kevin, Mr. Kevin Hynes.	10:30:19	15	(Reporter asks for clarification.)	10:32:56
16	Q. Mr. Hynes, the individual sitting	10:30:26	16	MR. BRALY: It's Gold Bond, but he is	10:33:05
17	next to you now?	10:30:28	17	saying it "golden."	10:33:08
18	A. Yes.	10:30:29	18	BY MR. BRALY:	10:33:11
19	Q. All right. Do you recall when Mr.	10:30:30	19	Q. Do you know how you met Mr. Greve the	10:33:11
20	Hynes first made contact with you?	10:30:32	20	first time, how you were introduced to him?	10:33:14
21	A. In March or February. I don't	10:30:38	21	A. That was after I wrote a review for	10:33:17
22	remember.	10:30:40	22	Dr. Gunter. So and then I came to States in August	10:33:23
23	Q. This year though?	10:30:40	23	last year because my daughter -- with my daughter.	10:33:33
24	A. This year. Anyway, this year.	10:30:41	24	She lives in Washington, DC. So at that junction, I	10:33:40

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1	think they -- Dr. Gunter knows I am coming to the	10:33:45	1	introduced you to Mr. Hynes?	10:37:02
2	States. Then I met with Mr. Greve.	10:33:52	2	A. Yes.	10:37:04
3	Q. Okay. You know Dr. Gunter has served	10:33:57	3	Q. Had you had any contact with anybody	10:37:05
4	as an expert witness for AII in asbestos-related	10:34:00	4	representing Johnson & Johnson prior to meeting Mr.	10:37:09
5	lawsuits. You're aware of this, right?	10:34:07	5	Hynes?	10:37:13
6	A. I only aware he working with Mr.	10:34:10	6	A. No.	10:37:14
7	Greve. At that time, I didn't even know AII name	10:34:14	7	Q. Have you ever met Bruce Bishop?	10:37:15
8	so, okay.	10:34:19	8	A. I didn't know this name. Yeah, I	10:37:19
9	Q. All right. So Dr. Gunter initially	10:34:20	9	never met this name.	10:37:22
10	asked you to write this report in January of 2022	10:34:46	10	Q. Have you ever corresponded with Bruce	10:37:24
11	related to Gold Bond.	10:34:50	11	Bishop?	10:37:27
12	A. You finished?	10:34:56	12	A. No, never.	10:37:28
13	Q. I was going to continue.	10:34:57	13	Q. Other than Mr. Douglas, who we see in	10:37:38
14	A. Okay.	10:34:58	14	Exhibit 8, and Mr. Hynes, have you corresponded with	10:37:42
15	Q. That's correct so far, right?	10:34:59	15	any other attorneys for Johnson & Johnson?	10:37:45
16	A. Let me say this: He, actually he did	10:35:01	16	MR. HYNES: Clarifying, do you mean	10:37:50
17	not ask me to write anything. He asked me to review	10:35:05	17	corresponding in writing?	10:37:52
18	and I believe is such complicate matter, technical	10:35:11	18	MR. BRALY: I do.	10:37:53
19	matter I need to write down my opinion, but he did	10:35:19	19	A. Let me think. I don't think so, but	10:37:55
20	not ask me to write any review paper.	10:35:23	20	I could hardly remember.	10:38:10
21	Q. Okay.	10:35:28	21	Q. Other than Mr. Hynes, have you had	10:38:12
22	A. Okay. That I did.	10:35:29	22	meetings or conversations with any other attorneys	10:38:14
23	Q. That January 2022 paper is when you	10:35:32	23	representing Johnson & Johnson going back to	10:38:19
24	first theorized that the lighting Dr. Longo utilized	10:35:36	24	February or March of 2024?	10:38:23
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1	may be at its full intensity?	10:35:42	1	A. No.	10:38:27
2	A. Yeah, that was my opinion.	10:35:45	2	Q. Have you ever spoken with Morty	10:38:34
3	Q. Right. After that, you -- in August	10:35:46	3	Dubin?	10:38:37
4	of 2023, you and Dr. Gunter met again in Washington,	10:35:54	4	A. Yes, I did.	10:38:38
5	DC where you recorded the video, that very short	10:36:00	5	Q. Tell me when you met Mr. Dubin and	10:38:39
6	video where he confirmed that you had actually	10:36:04	6	when you guys first met.	10:38:43
7	written that report.	10:36:07	7	A. That was the, the May 29th or	10:38:49
8	A. Correct. That's on the 28th of	10:36:08	8	May 30th, Dr. Longo's hearing. At first I met Morty	10:38:57
9	August. Okay.	10:36:10	9	Dubin that day.	10:39:07
10	Q. That video was shot from multiple	10:36:12	10	Q. Okay. All right. Have you discussed	10:39:09
11	different camera angles. Do you know who paid to	10:36:16	11	your potential testimony in the MDL or in Ms.	10:39:16
12	set up the videographer crew?	10:36:18	12	Clark's case with anybody other than Mr. Hynes?	10:39:21
13	A. Nobody told me that. That I did not	10:36:22	13	A. No.	10:39:32
14	ask.	10:36:26	14	Q. Have you consulted with Mickey Gunter	10:39:32
15	Q. Up until August of 2023, had you been	10:36:27	15	about the nature of litigation or the types of	10:39:36
16	paid any money by anybody for your work reviewing	10:36:31	16	questions you may receive?	10:39:39
17	Dr. Longo's PLM analysis?	10:36:37	17	A. No.	10:39:41
18	A. No.	10:36:42	18	Q. When you prepared for this	10:39:44
19	Q. After that, you were introduced to	10:36:43	19	deposition, did you only meet with Mr. Hynes?	10:39:46
20	Mr. Greve, who you believe to be employed with AII,	10:36:47	20	A. Yes.	10:39:50
21	correct?	10:36:52	21	Q. Did you review potential questions	10:39:55
22	A. That was later, but not at that time.	10:36:53	22	that you might be asked?	10:39:57
23	Okay.	10:36:57	23	MR. HYNES: I object on the grounds	10:39:58
24	Q. Mr. Greve is the person who	10:36:58	24	of privilege to the extent that you're asking for	10:40:00

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1	the content of communications with counsel during	10:40:03	1	Are you aware that you have not been
2	the preparation for MDL and Clark cross-noticed	10:40:05	2	designated as an expert witness in Ms. Clark's case?
3	deposition.	10:40:15	3	A. No.
4	MR. BRALY: What privilege are you	10:40:16	4	Q. Okay. Your -- so it's -- your first
5	referring to?	10:40:17	5	contact with anybody representing Johnson & Johnson
6	MR. HYNES: Work product privilege.	10:40:17	6	relative to asbestos litigation was in February or
7	MR. BRALY: That is not work product	10:40:19	7	March of this year.
8	privileges.	10:40:21	8	A. Correct.
9	MR. HYNES: With respect to the	10:40:22	9	Q. All right. Do you know what Mr.
10	content of communications in preparation for a	10:40:22	10	Hynes relationship with mister...
11	deposition session I believe it is.	10:40:25	11	MR. HYNES: Greve.
12	MR. BRALY: So I don't agree with	10:40:39	12	MR. BRALY: I will start the question
13	you. Yelling at you about it won't do anything.	10:40:41	13	over again.
14	I'm going to modify my question, but not because I	10:40:45	14	Q. Do you know what Mr. Hynes's
15	agree with you so we may come back to this at a	10:40:48	15	relationship with Mr. Greve is going back prior to
16	later time.	10:40:52	16	you meeting Mr. Hynes?
17	MR. HYNES: Sure. Go ahead.	10:40:53	17	A. They have to because Mr. Greve
18	BY MR. BRALY:	10:40:56	18	introduce Mr. Hynes to me. They must know each
19	Q. Don't tell me what, but did you	10:40:58	19	other before that.
20	review potential questions that you may be asked at	10:41:00	20	Q. I agree with that.
21	this deposition?	10:41:04	21	A. Okay.
22	A. Review with whom?	10:41:05	22	Q. What I am driving at is, do you have
23	Q. Mr. Hynes.	10:41:07	23	any understanding about what -- how they knew each
24	A. We met yesterday just go over my MDL	10:41:10	24	other or under what circumstances?
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1	report. That's it.	10:41:17	1	A. No, I don't.
2	Q. No practice questions or anything	10:41:19	2	Q. Very well. Since your retention in
3	like that?	10:41:21	3	March, you have been under an agreement where they
4	A. No.	10:41:22	4	will pay you \$800 an hour for your time, correct?
5	Q. Okay. Did you review any deposition	10:41:23	5	A. Correct.
6	transcripts of examinations that I've conducted or	10:41:26	6	Q. Did you consult with anybody in
7	Mr. Placitella had conducted or anything of that	10:41:31	7	coming up with that value for your time?
8	nature?	10:41:37	8	A. I did.
9	A. I don't remember.	10:41:37	9	Q. Who?
10	Q. Okay. Have you reviewed anybody	10:41:38	10	A. My daughter. She's in finance.
11	else's deposition or trial transcripts in	10:41:41	11	Q. Well, okay. There were a series of
12	preparation for this case or either of these cases?	10:41:44	12	invoices provided, and instead of marking each of
13	A. Not for the preparation, but I did	10:41:49	13	them individually, we created a summary, which is
14	see it, did read I think Dr. Longo's deposition	10:41:57	14	Exhibit 9.
15	document, the transcript, before, but I don't think	10:42:04	15	(Exhibit 9 Summary of Invoices marked for
16	it's related to my deposition.	10:42:09	16	identification.)
17	Q. In this retention -- excuse me. In	10:42:23	17	Q. There is actually a copy of it in
18	this retention letter of March 5, 2024, you're	10:42:29	18	front of you.
19	provided with an anticipated trial date for this	10:42:33	19	A. Yes.
20	case of July 22, 2024. Do you see that?	10:42:36	20	Q. Does the summary, does it appear
21	A. Yes, I see that.	10:42:40	21	accurate?
22	Q. Now, that is not currently the trial	10:42:41	22	MR. HYNES: I will note that he
23	date for Ms. Clark's case, but in March that was	10:42:44	23	hasn't had a chance to go back through each invoice
24	accurate.	10:42:47	24	and compare.

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1	But you can answer. 10:45:05	1	the working horse for the asbestos lab. That's a 10:49:04
2	A. It should be, because I recognize 10:45:07	2	pretty decent microscope. I want one so that it's 10:49:07
3	that is the invoice I sent. 10:45:10	3	better if I want to exam some samples at home. 10:49:14
4	Q. In total since March 6th of this 10:45:14	4	Okay. 10:49:19
5	year, up to this date or the last invoice is 10:45:27	5	Q. Did King & Spalding purchase that? 10:49:19
6	June 24th, you've billed 322.9 almost 323 total 10:45:32	6	A. No. I did. 10:49:22
7	hours? 10:45:40	7	Q. You purchased it. What did that 10:49:23
8	A. Yes, I did. 10:45:40	8	microscope cost? 10:49:25
9	Q. For these entries -- this entry of 10:45:41	9	A. I remember it's 1500. 10:49:26
10	May 30th of 2024, were you billing \$800 an hour to 10:45:49	10	Q. 1500 or 15,000? 10:49:30
11	sit in the courtroom and watch Dr. Longo's 10:45:58	11	A. No. 1500 and I have my credit card 10:49:31
12	testimony? 10:46:02	12	charge. 10:49:38
13	A. I believe I did. 10:46:02	13	Q. Sure. Did you participate with the 10:49:39
14	Q. Your report in this case was 10:46:05	14	attorneys for Johnson & Johnson in preparing 10:49:46
15	completed or issued on May 21st. Here. It's 10:46:11	15	questions to ask Bill Longo in his hearing? 10:49:49
16	Exhibit 3. It's dated May 21st. Do you see that? 10:46:19	16	A. I don't think so because I came back 10:49:57
17	A. Mm-hmm. 10:46:24	17	on the 27th from China. The hearing is 29th and I 10:50:01
18	Q. So leading up to May 21st, I can 10:46:25	18	don't think so. 10:50:11
19	understand the work that you were conducting to put 10:46:37	19	Q. Did you participate with lawyers from 10:50:11
20	together your report. What is taking up your time 10:46:41	20	Johnson & Johnson in preparing questions for Paul 10:50:14
21	since May 30th for these entries of 12 hours, 12 10:46:46	21	Hess's deposition taken yesterday? 10:50:18
22	hours, 12 hours? What does that involve? What have 10:46:51	22	A. I think we talk about that but not 10:50:29
23	you been doing? 10:46:56	23	necessarily like say the question to be asked. 10:50:32
24	A. I believe I am still review the 10:47:01	24	Okay. But I did mention the problem in the MS 10:50:39
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1	material at hands and also issues related to my MDL 10:47:05	1	report of the PLM analysis, the problem of the 10:50:46
2	report. Okay. 10:47:14	2	analysis. Now, if the analysis was done by Paul 10:50:51
3	Q. Okay. Your total billing since March 10:47:16	3	Hess, then it must be the problem about his 10:50:57
4	of this year through June 24th has been \$258,240, 10:47:20	4	analytical skill, things like that. Yeah. 10:51:03
5	correct? 10:47:26	5	Q. When you say problems, we are going 10:51:09
6	A. Correct. 10:47:26	6	to talk about these eventually at some point we will 10:51:11
7	Q. With the exception of March, every 10:47:27	7	get to it. But that would include problems with the 10:51:15
8	single month you've billed in excess of \$65,000? 10:47:34	8	lighting, problems with the field of view? 10:51:18
9	A. Correct. 10:47:39	9	A. Mm-hmm. 10:51:23
10	Q. All right. Oh, Mr. Douglas, Michael 10:47:40	10	Q. I'm sorry. You have to say yes or 10:51:24
11	Douglas, this person to whom this -- from whom this 10:48:01	11	no. 10:51:26
12	email is from, exhibit -- I'm sorry -- in Exhibit 8, 10:48:06	12	A. Yes. 10:51:27
13	have you ever spoken with him? 10:48:12	13	Q. I'm sorry. Problems with the size 10:51:27
14	A. Yes, I did. 10:48:16	14	distribution? 10:51:31
15	Q. Okay. About what? 10:48:17	15	A. Yes. 10:51:33
16	A. About -- I think the purchase of 10:48:20	16	Q. I think those are the big ones. Am I 10:51:34
17	polarized microscope, which is the seller is in 10:48:28	17	missing a big one? 10:51:40
18	Connecticut, ask him to arrange transportation to 10:48:32	18	A. Or so the distorted dispersion 10:51:42
19	bring that microscope to New York City. Okay. 10:48:39	19	staining color. 10:51:46
20	Q. Purchase the polarized light 10:48:46	20	Q. The focus with the reflection effect? 10:51:47
21	microscope for what purpose? Don't you already have 10:48:49	21	A. Yeah. 10:51:51
22	one of those? 10:48:53	22	Q. Right? 10:51:52
23	A. Well, the one I had was not very 10:48:53	23	A. Yeah. 10:51:53
24	good. I purchased an Olympus BH-2, which used to be 10:48:58	24	Q. Okay. Did you evaluate Mr. Hess's 10:51:53

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1 responses to any of those criticisms in his deposition yesterday?	10:52:00	1 chrysotile?	10:54:54
2	10:52:04	2 A. Could I look my report?	10:54:56
3 A. No, but I was attending so I'm aware of his answers, yeah.	10:52:06	3 Q. Mm-hmm.	10:54:58
4	10:52:12	4 A. The tensile strength of chrysotile	10:55:25
5 Q. For example, when we get to talking about the lighting associated with the analysis that was performed, you're aware that these microscopes have a lighting adjustment knob, correct?	10:52:14	5 according to the literature is 1.1 to 4.4 gigabars.	10:55:29
6	10:52:16	6 Q. What page are you looking at on	10:55:43
7	10:52:20	7 your --	10:55:45
8	10:52:24	8 A. I am looking at page 40.	10:55:46
9 A. Correct.	10:52:28	9 Q. 40? Is the page on the screen right	10:55:49
10 Q. And you're aware that lighting can be digitally manipulated after the fact through digital software, correct?	10:52:28	10 now the page that you're referencing?	10:56:19
11	10:52:32	11 A. That is the talk. The previous.	10:56:22
12	10:52:37	12 Q. I'm sorry.	10:56:25
13 MR. HYNES: Vague, overbroad.	10:52:43	13 A. Yeah, yeah, I'm referring this page.	10:56:26
14 He can answer.	10:52:46	14 Q. Okay. I got you. It's paginated 40	10:56:28
15 A. Are you talking about the micrograph or the time the field of view when he is conducting the analysis?	10:52:48	15 in Exhibit C. It's page 60 in the pdf of Exhibit 3	10:56:32
16	10:52:52	16 just for the record. Okay.	10:56:38
17	10:52:59	17 Is there any way to measure the tensile strength of chrysotile with a microscope?	10:56:42
18 Q. Both very good questions. Before I get into the details on this, I'm asking generally.	10:52:59	18	10:56:45
19	10:53:02	19 A. No.	10:56:50
20 A. Okay.	10:53:06	20 Q. Let me ask you now about your	10:57:03
21 Q. You're aware that images can be artificially brightened or dimmed using software like PowerPoint or Photoshop or things of that nature?	10:53:07	21 interactions with Ann Wylie, all right?	10:57:18
22	10:53:10	22 A. Yes. Okay.	10:57:22
23	10:53:14	23 Q. I'm not going to ask you about that	10:57:24
24	10:53:17	24 right now.	10:57:27
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1 A. Yes, of course.	10:53:17	1 A. Okay.	10:57:28
2 Q. Of course. Did you evaluate Mr. Hess's responses in the deposition where he testified under oath that the PLM when he conducted the analysis was at its full brightness?	10:53:19	2 Q. When did you first meet Dr. Wylie?	10:57:30
3	10:53:23	3 A. On the I think 28th of May at the	10:57:36
4	10:53:27	4 hearing in New Brunswick.	10:57:45
5	10:53:33	5 Q. Do you know of Dr. Wylie prior to	10:57:50
6 A. Was what?	10:53:36	6 meeting her in person?	10:57:54
7 Q. Was at its full brightness.	10:53:38	7 A. Yes.	10:57:55
8 A. I was aware his testimony, but since I used that microscope myself, so I believe what he said was not true.	10:53:42	8 Q. What did you know about Dr. Wylie	10:57:57
9	10:53:47	9 prior to meeting her?	10:57:59
10	10:53:54	10 A. First, I think she's a famous	10:58:01
11 Q. When is the first time you used, quote, that microscope?	10:53:56	11 professor at University of Maryland. Also I had	10:58:07
12	10:54:00	12 another professor, Mr. Luke Chang. Luke Chang was	10:58:13
13 A. That was on the 15th of last month, June 15th.	10:54:02	13 Ann Wylie's college at the same geology department.	10:58:21
14	10:54:06	14 So I was friends with friends with Professor Luke	10:58:29
15 Q. Okay. So the first time you used the what you believe to be the same microscope that Mr. Hess used was after you had authored your report in these cases?	10:54:07	15 Chang. And he talked about Ann Wylie, saying he is	10:58:34
16	10:54:10	16 working same field. He is mineralogist, very	10:58:41
17	10:54:13	17 accomplished mineralogist. Also when I was reading	10:58:46
18	10:54:16	18 literature, I think he publish a paper with Jennifer	10:58:51
19 A. Correct.	10:54:19	19 Verkouteren NIST about amphibole so I was aware of	10:58:55
20 Q. In fairness to you, this next question has no natural place anywhere in my outline, so this is an out-of-left-field question. I need to prepare you for that.	10:54:38	20 it, aware of her.	10:59:15
21	10:54:40	21 Q. You had mentioned somebody who is	10:59:18
22	10:54:45	22 associated with NIST, which is NIST?	10:59:19
23	10:54:48	23 A. Yeah.	10:59:23
24	10:54:50	24 Q. Who was that?	10:59:23

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1 A. That's Jennifer Verkouteren. She is a researcher at NIST. Also a mineralogist. Okay.	10:59:24 10:59:28	1 A. Yes, yes.	11:01:52
3 Q. Do you know anything about Ann Wylie's affiliation with a trade organization known as The National Stone and Sand Gravel Association?	10:59:34 10:59:42 10:59:46	2 Q. You conclude here by saying [Reading]	11:01:53
6 A. No, I don't.	10:59:51	3 I think the lawyers involved should benefit from a one-day training session with the two of us to ensure they understand the basic chrysotile and talc analysis by polarized light microscopy needed in litigation.	11:01:55 11:01:58 11:02:01 11:02:06
7 Q. Stone Sand and Gravel. I'm sorry.	10:59:52	7 Thanks, Shu-Chun.	11:02:11
8 A. No.	10:59:56	8 A. Yes.	11:02:15
9 Q. You don't know anything about her association or affiliation with that group?	10:59:56 10:59:58	9 Q. I am going to ask a very pointed question that sounds insulting. I mean it literally	11:02:16 11:02:19
11 A. No. Okay.	10:59:59	10 but it sounds insulting. I am telling you that up front.	11:02:22 11:02:25
12 Q. Do you know anything about Ann Wylie's affiliation with a talc mining concerning referred to as Vanderbilt minerals?	11:00:01 11:00:04 11:00:07	13 A. Okay.	11:02:25
15 A. No.	11:00:10	14 Q. What do you know about litigation?	11:02:25
16 Q. Do you know anything at all about the mineralogy of talc located in Upstate New York?	11:00:10 11:00:12	15 MR. HYNES: Objection; vague.	11:02:29
18 A. No.	11:00:17	16 Overbroad.	11:02:31
19 Q. Do you know anything about Ann Wylie's advocacy for reclassifying asbestos articles as non-asbestiform or asbestiform?	11:00:18 11:00:23 11:00:29	17 A. I think the litigation is the dispute whether there is asbestos mineral, like chrysotile, in the baby powder product. I believe that issue I have been providing my consulting about. That's my understanding.	11:02:33 11:02:38 11:02:43 11:02:50 11:02:58
22 MR. HYNES: Objection to form.	11:00:34	22 Q. Do you know what experience Dr. Wylie has relative to polarized light microscopy?	11:02:58 11:03:02
23 Argumentative.	11:00:36	24 A. I think I know she was teaching the	11:03:07
24 You can answer.	11:00:36		
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1 A. No, I don't.	11:00:37	1 course in University of Maryland.	11:03:11
2 Q. Do you know anything about Ann Wylie's testimony to Congress relative to the 1992 OSHA regulations --	11:00:38 11:00:40 11:00:44	2 Q. Have you scheduled this one day training or is this progressed in any way to where you are preparing to conduct a training session for attorneys to teach them information that you think might be important to them?	11:03:16 11:03:20 11:03:23 11:03:28 11:03:32
5 A. Not at all.	11:00:46	7 A. No, because Ann Wylie, she was not responsive. Okay.	11:03:34 11:03:38
6 MR. HYNES: Let him -- sorry. Let him finish the question.	11:00:48 11:00:50	9 Q. Not responsive in what sense?	11:03:42
8 THE WITNESS: Okay.	11:00:52	10 A. To my suggestion in this email.	11:03:44
9 (Exhibit 10 Collection of Correspondence between Su and Dr. Wylie marked for identification.)	11:00:52 11:01:05	11 Q. Do you mean she told you no or do you mean that she just hasn't responded?	11:03:48 11:03:50
11 Q. Exhibit 10 is an email -- it's two pages. It's two emails from you to Dr. Wylie.	11:01:05 11:01:08	13 A. She did not respond to that. He [sic] only replies thank you for my paper. He [sic]	11:03:54 11:03:57
13 A. Correct.	11:01:14	14 never mentioned whether she agree about this	11:04:01
14 Q. The first one here was sent June 1st of this year 2024. And there is a series of seven attachments.	11:01:15 11:01:17 11:01:23	16 training I mentioned.	11:04:07
17 A. Mm-hmm. Yes.	11:01:25	17 Q. Okay. The response here -- this is the second page -- says [Reading] Thank you,	11:04:08 11:04:12
18 Q. It says [Reading] It was a great pleasure to meet you in person. Here are the matching wavelengths to refractive index or RI conversion tables for Cargille and DRIMMC oils.	11:01:26 11:01:28 11:01:31 11:01:35	19 Shu-Chun. I appreciate these very much. Best regards, Ann.	11:04:14 11:04:19
22 We will talk about those in a second.	11:01:40	21 A. Mm-hmm.	11:04:21
23 Then you attach some of your recent papers, fair?	11:01:43	22 Q. You have to say "yes" or "no."	11:04:22
24 Yes?	11:01:51	23 A. Yes.	11:04:24
		24 Q. I hate it too.	11:04:24

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1	A. I'm sorry. That's the first time I	11:04:26	1 liquids that are listed as appropriate for	11:07:41
2	do this deposition.	11:04:27	2 evaluating chrysotile in the gamma direction include	11:07:46
3	Q. Of course. It's awful. I know what	11:04:28	3 refractive index oils of 1.550 and 1.560?	11:07:52
4	you meant but.	11:04:32	4 A. Correct.	11:08:00
5	Have you had anymore communications	11:04:37	5 Q. Correct. I need to rename this real	11:08:00
6	of any kind with Dr. Wylie, spoken or in writing?	11:04:39	6 quick.	11:08:17
7	A. No.	11:04:44	7 (Exhibit 13 The Dispersion Staining	11:08:22
8	Q. All right. So that was it. After	11:04:50	8 Technique and Its Application to Measure Refractive	11:08:28
9	her email on June 1st of this year, you have not	11:04:57	9 Indices of Nonopaque Materials With Emphasis on	11:08:33
10	spoken with Dr. Wylie at all?	11:05:00	10 Asbestos Analysis marked for identification.)	11:08:37
11	A. No, not at all.	11:05:03	11 Q. Exhibit 13 is a 2022 peer-reviewed	11:08:22
12	Q. Do you know she gave a deposition in	11:05:08	12 paper that you authored called The Dispersion	11:08:25
13	this case, in Kayme Clark's case and in the MDL?	11:05:10	13 Staining Technique and Its Application to Measure	11:08:28
14	Are you aware of that?	11:05:15	14 Refractive Indices of Nonopaque Materials With	11:08:31
15	A. I am aware of that.	11:05:16	15 Emphasis on Asbestos Analysis, correct?	11:08:35
16	Q. Did you read it?	11:05:17	16 A. Yes, that's my paper.	11:08:38
17	A. No.	11:05:18	17 Q. There is a quotation in this paper	11:08:40
18	Q. You attached to this two documents,	11:05:26	18 that I know you're familiar with by this point.	11:08:43
19	which you provided to me. I am going to have them	11:05:31	19 A. Yeah.	11:08:46
20	marked here.	11:05:33	20 Q. In the Section 3 that says "Select a	11:08:47
21	The first one is going to be	11:06:08	21 proper refractive index liquid to mount the	11:08:51
22	Exhibit 11. This is a reference sheet. It's 34	11:06:10	22 samples," there is a statement in here where you	11:08:55
23	pages long. But it's the selection of DRIMMC	11:06:16	23 state [Reading] The rule of thumb is to choose a	11:08:58
24	immersion liquids for asbestos analysis. That's the	11:06:21	24 refractive index liquid as close as possible to the	11:09:02
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1	Delaware Research Institute For Minerals.	11:06:26	1 refractive indexes that will be measured. For	11:09:06
2	A. Material.	11:06:30	2 example, there are chrysotile minerals whose	11:09:11
3	Q. Do you know what it stands for?	11:06:30	3 refractive indexes are significantly higher than	11:09:14
4	A. I think it's Delaware Research	11:06:31	4 those of the standard chrysotile from the NIST,	11:09:17
5	Institute of Material -- Mineral and Material	11:06:35	5 N-I-S-T, SRM 1866 set. In that case, 1.555 or 1.560	11:09:22
6	Characterization. I find difficult to pronounce	11:06:46	6 instead of 1.550 refractive index liquids should be	11:09:34
7	that word after my stroke.	11:06:53	7 used to determine gamma.	11:09:41
8	Q. I'm sorry. I wasn't trying to put	11:06:55	8 Do you see that?	11:09:44
9	you on the spot.	11:06:56	9 A. Correct.	11:09:44
10	A. Okay.	11:06:58	10 Q. A couple of questions related to	11:09:44
11	(Exhibit 11 DRIMMC Asb RI Conversion Tables	11:06:19	11 this:	11:09:48
12	34 pages 2022 marked for identification.)	11:07:00	12 Chrysotile is a family of minerals	11:09:51
13	Q. DRIMMC and Cargille are two of the	11:07:00	13 depending on where it comes from may have a	11:09:54
14	companies that manufacture what are referred to as	11:07:04	14 different refractive index than chrysotile from	11:09:58
15	standards or standard oils used for the process of	11:07:07	15 another place in the world, correct?	11:10:01
16	polarized light microscopy, true?	11:07:12	16 A. Correct.	11:10:03
17	A. Yes.	11:07:14	17 Q. Chrysotile taken from Canada, for	11:10:03
18	Q. What I was going to ask about --	11:07:15	18 example, may have a different refractive index than	11:10:10
19	before I do that, Exhibit 12 is the same -- similar	11:07:19	19 chrysotile taken from somewhere else, correct?	11:10:13
20	document, but it's the Cargille liquids.	11:07:24	20 A. Correct.	11:10:16
21	A. Yes.	11:07:28	21 Q. Chrysotiles refractive indices are	11:10:16
22	(Exhibit 12 Cargille Asb RI Conversion	11:07:28	22 expressed as a range because they're known in nature	11:10:22
23	Tables 34 pages 2022 marked for identification.)	11:07:29	23 to occur in a range, correct?	11:10:24
24	Q. So for both Exhibits 11 and 12, the	11:07:29	24 A. Correct.	11:10:27

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1	Q. In your opinion, what is the range of refractive indexes for chrysotile in the gamma direction?	11:10:35	1 this will be Exhibit 15. This is a collection of 26 photos.
2		11:10:40	2 (Exhibit 15 Collection of Containers Sent to Su marked for identification.)
3		11:10:44	3 The samples that were sent to you -- this is not the SG-210 -- but came to you in these plastic containers of different colors, correct?
4	A. Then I would have to refer to the EPA documents 600 93 test method. I believe it was Table 2.2, the listed the range of the 6 asbestos minerals refract index in that table. Yes, this is the table.	11:10:48	4 11:10:53 11:11:07 11:11:17 11:11:25
5			5 Q. The samples that were sent to you -- 11:14:08
6			6 this is not the SG-210 -- but came to you in these 11:14:12
7			7 plastic containers of different colors, correct? 11:14:16
8			8 A. Mm-hmm. 11:14:20
9	Q. Yes. So this is Exhibit 14. This is the 1992 [sic] EPA R-93 600 Test Method.	11:11:26	9 Q. I'm sorry. You have to go with "yes" 11:14:21
10		11:11:31	10 or "no." 11:14:23
11	(Exhibit 14 1993 EPA R-93 600 Test Method marked for identification.)	11:11:40	11 A. These are the sample I analyzed in 11:14:24
12		11:11:41	12 Pittsburgh. 11:14:29
13	Q. In your opinion, the ranges for chrysotile in gamma, which is the -- under the refractive indices column. It's the second Greek letter.	11:11:41	13 Q. These photographs were produced to us 11:14:32
14		11:11:45	14 in a folder that was labeled sent to Su, meaning 11:14:36
15		11:11:51	15 that these -- well, I'm inferring -- anybody can 11:14:45
16		11:11:56	16 title a folder anything they want. Just from the 11:14:49
17	A. Yes.	11:11:56	17 title of it, I presume these were sent to you. 11:14:53
18	Q. Range from 1.517 all the way up to 1.567.	11:11:57	18 A. Correct. 11:14:57
19		11:12:03	19 Q. Were they sent to you in these 11:14:57
20	A. Yes.	11:12:07	20 containers? 11:15:00
21	Q. Okay. Is this your only reference point?	11:12:07	21 A. Yes. I have it. 11:15:01
22		11:12:15	22 Q. Great. Were they sent to you already 11:15:03
23	A. Yes.	11:12:17	23 mounted on slides? 11:15:06
24	Q. Okay. Have you ever seen chrysotile	11:12:19	24 A. These are the slides I analyzed in 11:15:08
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1	with a refractive index above 1.6 in gamma?	11:12:23	1 Pittsburgh after the completion of the work. I said 11:15:12
2	A. Only the Calidria. It's gamma is 1.750 or 1.760 or 1.561. That's my measurement.	11:12:31	2 I want save those slides so please collect them, 11:15:19
3		11:12:37	3 pack them and send that to me. 11:15:27
4	Q. That's your measurement?	11:12:48	4 Q. I am glad that you saved them. But 11:15:29
5	A. That's right. Also the reference value in the NVLAP proficient testing.	11:12:50	5 my question was a little bit different. 11:15:31
6		11:12:53	6 These arrived to you as prepared 11:15:34
7	Q. Yeah, you're testifying of Calidria was conducted in June of this year, correct?	11:12:59	7 slides, correct? 11:15:38
8		11:13:05	8 A. Actually, we prepare -- I prepare 11:15:40
9	A. Correct.	11:13:08	9 some of them in the lab before I analyze them. 11:15:44
10	Q. Is that the first time you've ever analyzed a sample of what you believe to be Calidria?	11:13:09	10 Q. So, for example, the photograph that 11:15:51
11		11:13:11	11 we are looking at right here, which is page six of 11:15:53
12		11:13:13	12 Exhibit 15, that's the photograph that we are 11:15:57
13	A. Yes, that's the first time I personally analyze it.	11:13:15	13 looking at. It says SG-210, 1.550. 11:15:59
14		11:13:18	14 A. Correct. 11:16:05
15	Q. The origin of the Calidria that you analyzed, it was provided to you by Matt Sanchez,	11:13:20	15 Q. And this is how you received it, 11:16:05
16		11:13:24	16 correct? It was in this container when you received 11:16:07
17	correct?	11:13:29	17 it? 11:16:10
18	A. Actually, it was Professor Gunter.	11:13:31	18 A. Yes. 11:16:11
19	He sent his sample to Mr. Sanchez and Mr. Sanchez brought that sample to Pittsburgh. I said I want to analyze them. That's SB-210 grade.	11:13:38	19 Q. The labeling indicates that this had 11:16:11
20		11:13:45	20 already been mounted in 1.550 oil, right? 11:16:14
21		11:13:51	21 A. That was mounted on the day of my 11:16:20
22	Q. That's SG?	11:13:56	22 analysis. 11:16:27
23	A. SG-210, yeah.	11:13:58	23 Q. Who did that? 11:16:27
24	Q. The samples that were sent to you --	11:14:01	24 A. I believe it's Monica at RJ Lee. 11:16:29

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1	Q. Is she a scientist or lab technician? 11:16:38	1	but you were not a coauthor of either of these 11:20:18
2	Who is she? 11:16:40	2	books? 11:20:21
3	A. She is an analyst, she is 11:16:41	3	A. I indicated that was my review. The 11:20:22
4	accomplished analyst. 11:16:43	4	publisher sent me two books for me to review. 11:20:27
5	Q. What is purported to be SG-210 here 11:16:50	5	Q. Optical Mineralogy, 2nd Edition? 11:20:32
6	is something that was provided to your understanding 11:16:54	6	A. Yes, yes. 11:20:35
7	from Mickey Gunter to Matt Sanchez to you? 11:16:56	7	Q. This is my only copy. I am going to 11:20:36
8	A. Correct. Or so I heard Mickey 11:17:02	8	hand this to you. 11:20:39
9	Gunter's SG-210 was provided by Dr. Longo. 11:17:07	9	A. Okay. 11:20:43
10	Q. Okay. So it's your belief that the 11:17:12	10	MR. HYNES: Are you marking chapters 11:20:46
11	SG-210 was the same SG-210 that Dr. Longo previously 11:17:15	11	or sections? 11:20:49
12	provided to Mickey Gunter? 11:17:20	12	MR. BRALY: I will put it up on the 11:20:50
13	A. Yes, that's my understanding. 11:17:23	13	screen of what I am actually marking. 11:20:52
14	Q. And you have not looked at Mickey 11:17:26	14	Q. I am marking six pages from this 11:21:10
15	Gunter's analysis of this same material? 11:17:28	15	book. Optical Mineralogy by David Shelley as 11:21:13
16	A. No. 11:17:31	16	Exhibit 16. 11:21:16
17	Q. Why not? 11:17:31	17	(Exhibit 16 Optical Mineralogy Six Pages 11:21:17
18	A. You see, I don't think it's necessary 11:17:33	18	marked for identification.) 11:21:17
19	for me to look at that. I want look that myself. 11:17:36	19	Q. What I wanted to ask you about is 11:21:17
20	Q. The refractive index of in Gamma, the 11:17:50	20	where that blue tab is on the right-hand side of the 11:21:20
21	highest refractive index that you identified for 11:17:55	21	physical book, do you want to turn to that? 11:21:22
22	Calidria -- repeat it again if you can. 11:17:59	22	A. Yeah, I saw that. 11:21:29
23	A. Yeah, the highest refract index, the 11:18:01	23	Q. There is a section called Mineral 11:21:30
24	gamma refract index of the chrysotile I measured. 11:18:05	24	Descriptions. This is in Chapter 9. 11:21:32
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1	Q. Numerically -- 11:18:11	1	A. Yes. 11:21:36
2	A. Numerically my results is 1.560 or 11:18:13	2	Q. We get to a section here for 11:21:37
3	1.561. 11:18:22	3	olivines. There is a chart at page 154 that lists 11:21:44
4	Q. Is that something that you consider 11:18:30	4	forsterite, chrysotile and other minerals associated 11:21:53
5	to be at the higher range of what the refractive 11:18:33	5	with olivines where the gamma direction, the 11:21:57
6	index for chrysotile is in the gamma direction? 11:18:37	6	refractive index for chrysotile is reflected as 11:22:02
7	A. Correct. 11:18:41	7	ranging between 1.69 and 1.70. Do you see that? 11:22:06
8	Q. Do you have an opinion or have you 11:19:00	8	A. You mean which paragraph? 11:22:21
9	ever analyzed the refractive index of chrysotile 11:19:02	9	Q. I am looking at the chart. Figure 11:22:23
10	originating from Vermont? 11:19:07	10	9.1. 11:22:27
11	A. No. 11:19:12	11	A. The chart, that is olivine, that is 11:22:28
12	Q. Let me do a little cleaning up here. 11:19:25	12	not chrysotile. 11:22:31
13	All right. I am going to go back to your Exhibit 3 11:19:31	13	Q. The section below it says chrysotile. 11:22:32
14	for a moment. 11:19:35	14	Do you see that? 11:22:37
15	There is a list of references in 11:19:38	15	A. Which section? 11:22:38
16	Exhibit 3. At page -- it's paginated as page 3. 11:19:41	16	Q. Do you mind if I point it to you? 11:22:40
17	It's page 15 of the pdf. There are two books 11:19:52	17	A. Okay. 11:22:42
18	relevant to asbestos analysis listed here. One of 11:19:57	18	Q. I will come to you. I am trying to 11:22:43
19	them is 1989 book Introduction to Optical Mineralogy 11:20:00	19	figure out if I am looking at this correctly. Part 11:22:47
20	by William Nesse or Nesse. The other one is a book 11:20:05	20	of this is just educating me. See it says 11:22:50
21	1986 called Optical Mineralogy, 2nd Edition by David 11:20:09	21	chrysotile right there. Follow the line up for 11:22:53
22	Shelley. Do you see that? 11:20:14	22	gamma and it intersects at 1.69 and runs to 1.70. 11:22:55
23	A. I saw that. 11:20:15	23	A. No, that is not the chrysotile 11:23:02
24	Q. Your name is listed on both of these, 11:20:16	24	refract index. 11:23:05

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1 Q. Okay. What is it? 11:23:07		1 A. Okay. 11:27:10	
2 A. It is olivine. Olivine number is 11:23:11		2 Q. Right? 11:27:10	
3 forsterite, the other end member is fayalite. These 11:23:20		3 A. Yes. 11:27:11	
4 are the two end members in mineralogy, like a 11:23:24		4 Q. Yeah. For the properties for the 11:27:11	
5 mineral series. Okay. That all about olivine. 11:23:29		5 optical properties, it says that in gamma that these 11:27:15	
6 It's a mineral. 11:23:40		6 minerals can range from 1.545 all the way to 1.584. 11:27:20	
7 Q. Could I grab that back from you? 11:23:50		7 Do you see that? 11:27:26	
8 A. Yeah. 11:23:54		8 A. Yes. I saw that. 11:27:26	
9 Q. So it is your testimony then that the 11:24:07		9 Q. And that the birefringences 11:27:28	
10 chrysotile referenced here is not the same 11:24:09		10 associated with these falls between .004 to .017. 11:27:31	
11 chrysotile as what would be in a family like 11:24:12		11 Do you see that? 11:27:38	
12 serpentine; is that right? 11:24:18		12 A. Correct. 11:27:38	
13 A. Correct. 11:24:19		13 Q. And that there is an inverse 11:27:38	
14 MR. HYNES: Objection. Misstates 11:24:20		14 relationship between refractive index and 11:27:40	
15 testimony. 11:24:22		15 birefringence values? 11:27:46	
16 Q. So the objection kind of through me 11:24:23		16 A. Correct. 11:27:50	
17 off. I want to make sure we are in agreement here. 11:24:27		17 Q. Okay. You can hand that one back. 11:27:50	
18 What is -- when it's referencing 11:24:31		18 MR. BRALY: Kevin, what's your 11:28:10	
19 chrysotile, what is that a reference to in this 11:24:35		19 pleasure here as far as -- oh, don't want that. 11:28:11	
20 context? 11:24:40		20 MR. HYNES: Do you want to go another 11:28:14	
21 A. I don't know. I don't know why he 11:24:41		21 15, 20 and maybe break? 11:28:16	
22 put the chrysotile words in this graph. I have no 11:24:44		22 MR. BRALY: Sure. Sounds good. I 11:28:20	
23 idea. 11:24:52		23 have an outline and I have already kind of screwed 11:28:46	
24 Q. Do you know what? I do. I am saying 11:24:55		24 it all up. I am going to try to pick up where I am 11:28:48	
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1 it wrong. I'm saying it wrong. Okay. I think I 11:24:59		1 and see if we can cover some more ground. 11:28:53	
2 can resolve this. I'm just now realizing -- keep in 11:25:07		2 BY MR. BRALY: 11:28:53	
3 mind I got this book yesterday -- it doesn't say 11:25:11		3 Q. In your report, in the report that's 11:28:57	
4 chrysotile. It says chrysolite. 11:25:14		4 in front of you, Exhibit 3, you don't comment on -- 11:28:59	
5 A. Okay. It's not chrysotile. 11:25:21		5 or you don't critique the birefringence calculations 11:29:05	
6 Q. That actually explains what I was 11:25:25		6 that Dr. Longo performed relative to the minerals 11:29:10	
7 getting at then. That helps me intensely. That is 11:25:27		7 that he was examination, correct? 11:29:14	
8 chrysolite. 11:25:33		8 A. Correct. 11:29:16	
9 This will be Exhibit 17. This is the 11:25:40		9 Q. Why not? 11:29:17	
10 same book, just some additional pages. 11:26:23		10 A. For me, birefringence is not an 11:29:19	
11 (Exhibit 17 Optical Mineralogy 12 Pages 11:26:27		11 issue. Gamma is. Once you get alpha and a gamma 11:29:25	
12 marked for identification.) 11:26:27		12 correctly, you got birefringence. So actually we 11:29:30	
13 Q. We looked at that section. I am 11:26:27		13 don't think birefringence is a specific property you 11:29:36	
14 going to give you the book back. There is another 11:26:30		14 have to measure independently. You measure the 11:29:45	
15 section that begins at page 229. Right here. 11:26:32		15 gamma and the alpha that birefringence is 11:29:49	
16 A. Okay. 11:26:41		16 automatically. Therefore, you don't have to 11:29:54	
17 Q. This book that you referenced states 11:26:41		17 calculate that, because it was defined as the gamma 11:29:59	
18 that there are three varieties of serpentines, 11:26:51		18 minus alpha. 11:30:04	
19 chrysotile this time exactly spelled chrysotile -- 11:26:54		19 Q. Right, which is exactly how Dr. Longo 11:30:05	
20 not chrysolite -- lizardite and antigorite? 11:26:57		20 calculated birefringence, is by taking the gamma 11:30:07	
21 A. Correct. 11:27:02		21 value less the alpha value. 11:30:11	
22 Q. We are talking about the things that 11:27:03		22 MR. HYNES: Objection. 11:30:14	
23 are generally referred to when we are talking about 11:27:04		23 A. Yes. 11:30:15	
24 asbestos at least for chrysotile. 11:27:07		24 MR. HYNES: Misstates Dr. Longo's 11:30:16	

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1 methodology.	11:30:19	1 and also the data showed they misinterpreted the	11:33:15
2 MR. BRALY: Not really.	11:30:20	2 dispersion staining color. They think a mineral	11:33:20
3 BY MR. BRALY:	11:30:20	3 particle display a range of dispersion staining	11:33:25
4 Q. You were present for Dr. Longo's	11:30:20	4 color for its parallel direction with the gamma or	11:33:31
5 testimony as to how he calculated birefringence,	11:30:22	5 so for its perpendicular direction which is alpha.	11:33:35
6 correct?	11:30:27	6 They interpret that as a range of recur [ph] index.	11:33:40
7 A. Yes, I did.	11:30:27	7 This is totally wrong.	11:33:46
8 Q. Did you agree with how he calculated	11:30:28	8 Q. I feel we are talking about two	11:33:49
9 birefringence values? Was it scientifically	11:30:30	9 different things. One of them what I do understand	11:33:50
10 accurate in your opinion?	11:30:33	10 to be a criticism of yours about their findings,	11:33:54
11 MR. HYNES: Objection to form.	11:30:34	11 multiple refractive indices within a singular	11:33:58
12 Vague.	11:30:36	12 bundle, which is what I think you're talking about.	11:34:02
13 A. There are two aspects. The formula	11:30:36	13 A. Yes.	11:34:05
14 of birefringence, that's one issue, gamma minus	11:30:43	14 Q. I am asking about something a little	11:34:05
15 alpha. Another issue is the gamma value, whether	11:30:49	15 bit more discreet.	11:34:08
16 the gamma value is chrysotile or talc.	11:30:56	16 Back to Exhibit 14 this is the EPA	11:34:10
17 Q. Yeah.	11:31:03	17 493 we see a range of birefringence reported as	11:34:13
18 A. You see?	11:31:05	18 between .004 to .017 for chrysotile.	11:34:17
19 Q. Understood. Let me be as fair to	11:31:06	19 A. Correct.	11:34:23
20 this as I can be. I understand that you do not	11:31:09	20 Q. And that's the same range of	11:34:23
21 agree with Dr. Longo's values in the gamma direction	11:31:13	21 birefringence --	11:34:25
22 for what he is identifying as chrysotile. I	11:31:18	22 A. In the book.	11:34:27
23 understand that you don't agree with that.	11:31:22	23 Q. -- in the book, right?	11:34:28
24 Presuming the values are correct, did	11:31:24	24 A. Yes.	11:34:29
Page 83		Page 85	
1 he perform the calculation in a scientifically	11:31:28	1 Q. Okay. So it is fair to say that the	11:34:30
2 reliable way for calculating birefringence?	11:31:33	2 birefringence values associated with chrysotile fall	11:34:34
3 MR. HYNES: Same objection. Vague,	11:31:36	3 between .004 and .017?	11:34:40
4 overbroad.	11:31:39	4 A. Correct.	11:34:44
5 A. I don't think it's meaningless if you	11:31:40	5 Q. All right. And birefringence by the	11:34:45
6 don't have the correct gamma and alpha. That's the	11:31:42	6 way is a unit list number. It has -- it doesn't	11:34:47
7 key. Okay.	11:31:47	7 have units?	11:34:50
8 Q. Okay. Do you agree that subtracting	11:31:49	8 A. No.	11:34:51
9 the maximum gamma less the maximum alpha and the	11:31:53	9 Q. The birefringence associated with	11:34:55
10 minimum gamma minus the minimum alpha will give you	11:31:59	10 talc is generally higher than this?	11:34:58
11 a range of birefringence?	11:32:02	11 A. Much higher.	11:35:00
12 A. I disagree.	11:32:05	12 Q. Give me a range of the birefringence	11:35:02
13 Q. You do. Why?	11:32:06	13 you associate with talc. It may be here actually.	11:35:06
14 A. The concept maximum gamma, minimum	11:32:08	14 A. I think the best literature is Dr.	11:35:12
15 alpha is a confused concept. You see, when we talk	11:32:14	15 Gunter's on 2022 paper. He was the first who	11:35:17
16 of maximum and a minimum, it's not about single	11:32:22	16 measured 20 talc from different localities where he	11:35:25
17 particle. It's about a group, like chrysotile. You	11:32:29	17 can collect the sample. So he listed a range for	11:35:32
18 have location for Vermont, from Canada, from	11:32:34	18 each talc, you have alpha, now you have a gamma.	11:35:38
19 Arizona, from California. Okay.	11:32:41	19 But the average alpha I believe is around 1.50 --	11:35:43
20 Then if we talk alpha. Again, it's a	11:32:44	20 1.540. The average of gamma in his paper is 1.85,	11:35:53
21 group of mineral, not individual. For any	11:32:50	21 if I remember correctly. So the difference between	11:36:01
22 individual mineral chrysotile, you have only one	11:32:55	22 gamma and alpha on the average for talc is somewhere	11:36:07
23 value of birefringence. You have only one gamma and	11:33:01	23 under .045. That we talk about that the range of	11:36:15
24 one alpha. Here is the problem, because I believe	11:33:07	24 the birefringence about chrysotile an EPA method.	11:36:23

22 (Pages 82 - 85)

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1 But for each individual samples, they have 2 individual value of the birefringence.	11:36:31 11:36:36	1 A. Yes. 2 Q. Your opinion about Dr. Longo's	11:39:32 11:39:33
3 Q. I understand what you're saying. If 4 your evaluating a singular fiber of chrysotile and 5 you're calculating the refractive index for that 6 fiber, you can get a singular measurement for gamma 7 and alpha and calculate a singular birefringence 8 value?	11:36:40 11:36:43 11:36:47 11:36:50 11:36:53 11:36:58	3 finding of chrysotile in Johnson & Johnson's talc is 4 that what he's reporting as chrysotile is not 5 chrysotile?	11:39:41 11:39:45 11:39:48
9 A. That's correct.	11:36:59	6 A. No. 7 Q. Okay. I mean that is your opinion, 8 correct?	11:39:48 11:39:51
10 Q. For something like what's present 11 here in Exhibit 14 -- again, this is page 26 of 12 Exhibit 14. This is EPA R-93. When you're dealing 13 with a range of multiple fibers or multiple 14 measurements, you can get a range of birefringences?	11:37:00 11:37:02 11:37:07 11:37:14 11:37:19	9 A. That's right. 10 Q. Yes. Okay. Are you aware or have 11 you been told that Dr. Longo is not the only 12 scientist who has found chrysotile in Johnson & 13 Johnson's powder?	11:39:52 11:39:52 11:39:58 11:40:02 11:40:05
15 A. Correct.	11:37:24	14 A. I was aware I think there is a -- now 15 which agency is that? EPA or --	11:40:08 11:40:16
16 Q. Mathematically, when you have ranges 17 like this, you would calculate the range of 18 birefringence in this case like what we see on the 19 page here, by taking the maximum high end and the 20 maximum -- high end of gamma, subtracted by the high 21 end of alpha, and the low end of gamma subtracted by 22 the low end of alpha as they did in this example?	11:37:24 11:37:28 11:37:31 11:37:36 11:37:40 11:37:44 11:37:47	16 Q. FDA. 17 A. FDA. Yeah. I know it was sample 18 analyze by a lab in Maryland. Okay. I have been to 19 that lab. I was aware they found asbestos in the 20 sample.	11:40:20 11:40:21 11:40:25 11:40:30 11:40:35
23 A. Yes.	11:37:51	21 Q. You're talking about the AMA?	11:40:36
24 Q. Okay. The range for birefringence --	11:37:52	22 A. AMA.	11:40:38
		23 Q. Yeah. Were you aware of this prior 24 to being retained by Johnson & Johnson as an expert?	11:40:39 11:40:43
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1 by the way, you agree with that, right, when you're 2 dealing with ranges?	11:37:59 11:38:03	1 A. I never look into that before my 2 involvement, but after I was retained as an expert 3 witness, I was reading literature, then I came up to 4 that AMA. It's appendix for the FDA kind of report, 5 yeah.	11:40:49 11:40:54 11:41:02 11:41:09 11:41:17
3 A. Agree.	11:38:04	6 Q. Is this literature that was provided 7 to you by Mr. Hynes?	11:41:20 11:41:21
4 Q. Yes. Good. When you're dealing with 5 birefringence for chrysotile, you will get numbers 6 that range from .004 up until around .017?	11:38:04 11:38:07 11:38:10	8 A. No. That's -- I was -- I was 9 review -- looking the literature related to this 10 topic.	11:41:23 11:41:29 11:41:32
7 A. Correct.	11:38:17	11 Q. I could be wrong about this, but I 12 don't know if the AMA results were ever published in 13 the peer-reviewed literature. It may have been --	11:41:34 11:41:38 11:41:42
8 Q. Understanding that any individual 9 fiber or bundle will have its own discrete 10 birefringence value?	11:38:17 11:38:20 11:38:23	14 A. It's on the internet.	11:41:44
11 A. Between these two values.	11:38:24	15 Q. So you were just doing basically a 16 Google search about --	11:41:45 11:41:47
12 Q. Right. I apologize. I was probably 13 doing too many things at one time. For talc, what 14 is the range of birefringence that you associated 15 with talc?	11:38:26 11:38:30 11:38:34 11:38:37	17 A. That's right.	11:41:49
16 A. I will referred to that table. It's 17 somewhere I think between .04 to .05.	11:38:40 11:38:45	18 Q. Got you. You came across the AMA 19 findings from a couple years ago?	11:41:49 11:41:52
18 Q. Okay. So somewhere around four to 19 five times higher?	11:38:51 11:38:54	20 A. No. This year.	11:41:56
20 A. Yeah, that's about 10 times higher 21 than the chrysotile.	11:38:55 11:38:58	21 Q. No, no, no. Their findings were from 22 a couple years ago?	11:41:58 11:42:01
22 Q. I have a section that I want to cover 23 and I think it will be probably be time for lunch,	11:39:26 11:39:29	23 A. Yes.	11:42:02
24 okay?	11:39:32	24 Q. I'm sorry. That was confusing.	11:42:03

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1	That's something that you discovered after you	11:42:05	1	here? 11:44:28
2	became an expert -- or after you agreed to serve as	11:42:07	2	MR. BRALY: Yes. 11:44:29
3	an expert witness?	11:42:12	3	(A luncheon recess was taken.) 12:25:18
4	A. Correct.	11:42:13	4	
5	Q. That was part of your review that	11:42:13	5	
6	accounted for some of that billing that we looked at	11:42:15	6	
7	before?	11:42:17	7	
8	A. Yes.	11:42:18	8	
9	Q. Right. Are you aware that McCrone,	11:42:18	9	
10	as a hired lab for Johnson & Johnson, found	11:42:24	10	
11	chrysotile in Johnson & Johnson's Baby Powder?	11:42:27	11	
12	A. That, I am not aware.	11:42:32	12	
13	Q. Are you aware that the Colorado	11:42:34	13	
14	School of Mines found chrysotile in Johnson &	11:42:37	14	
15	Johnson's Baby Powder?	11:42:41	15	
16	A. That literature I read. I was aware.	11:42:41	16	
17	Q. Are you aware that NIOSH, the	11:42:46	17	
18	National Institution of Occupational Safety and	11:42:49	18	
19	Health, through a series of contractors found	11:42:52	19	
20	chrysotile in Johnson & Johnson's Baby Powder?	11:42:55	20	
21	A. No, I don't.	11:42:57	21	
22	Q. Are you aware that Art Langer found	11:42:58	22	
23	chrysotile in Johnson & Johnson's Baby Powder?	11:43:00	23	
24	A. No.	11:43:03	24	
		Page 91	Page 93	
1	Q. Are you aware that RJ Lee found	11:43:03	1	AFTERNOON SESSION 12:25:18
2	chrysotile in Johnson & Johnson's Baby Powder?	11:43:06	2	12:28:11
3	A. No.	11:43:09	3	BY MR. BRALY: 12:28:11
4	Q. You didn't know that?	11:43:09	4	Q. Welcome back from lunch. 12:28:18
5	A. No.	11:43:10	5	A. Thanks. 12:28:21
6	Q. They didn't tell you that?	11:43:10	6	Q. I hope that was -- you had a nice 12:28:21
7	A. No.	11:43:11	7	break. And just keep in mind that you need to -- if 12:28:23
8	Q. Didn't bother to mention it to you	11:43:12	8	you want to take a break or something, just to 12:28:28
9	while you're looking at all these things?	11:43:14	9	stretch -- 12:28:32
10	A. I did come across. I did Google	11:43:16	10	A. I will let you know. 12:28:32
11	search. I did not come up with any document saying	11:43:20	11	Q. Please do. 12:28:33
12	RJ Lee has found the, like you said, the asbestos in	11:43:25	12	A. So far, I'm okay. 12:28:34
13	baby powder. No, I don't.	11:43:31	13	Q. Great. We had looked at what's -- 12:28:36
14	Q. You understand that Bryan Bandli and	11:43:33	14	should be on your screen right here about samples, 12:28:40
15	Matt Sanchez, they work for RJ Lee?	11:43:37	15	26 pages of samples that came from a folder that was 12:28:45
16	A. I do. They never told me.	11:43:40	16	labeled "Sent to Su." That includes all of these 12:28:49
17	Q. Right. Are you aware that Johnson &	11:43:42	17	similar-looking containers with different labels on 12:28:54
18	Johnson's suppliers, including supplier generally	11:43:48	18	them. For example, the second page of this says 12:28:58
19	referred to as Imerys or Rio Tinto found chrysotile	11:43:52	19	.560 HD Valadez with and it gives a number M12001 12:29:02
20	in the supply for baby powder?	11:43:56	20	CTL? 12:29:11
21	A. No, I am not aware.	11:44:02	21	Were all of these containers provided 12:29:11
22	MR. BRALY: Kevin, this is a good a	11:44:23	22	to you by Matt Sanchez? 12:29:15
23	time as any.	11:44:25	23	A. Yes. Again, these are the samples I 12:29:18
24	MR. HYNES: Should we break for lunch	11:44:26	24	analyzed. 12:29:25

24 (Pages 90 - 93)

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1	Q. Yes. These are all part of the samples that you analyzed in June with Matt Sanchez and Bryan Bandli?	12:29:25	12:29:28
2			12:29:31
3			12:29:32
4	A. Correct.	12:29:33	
5	Q. And then you've provided those samples to us in the materials provided prior to this deposition?	12:29:37	12:29:41
6			12:29:43
7			12:29:44
8	A. Say again.	12:29:49	
9	Q. All of your images from the samples were provided?	12:29:49	12:29:49
10			12:29:49
11	A. Yes.	12:29:49	
12	Q. Yeah. So I was going to ask you about some of these. Some of these samples involve what is purported to be SG-210 mounted in 1.550 oil. There is another one in 1.560.	12:29:50	12:29:53
13			12:30:06
14			12:30:10
15	A. Correct.	12:30:10	
16	Q. So I have some of these images. I wanted to mark those images as exhibits as we go forward here. I am going to start with -- if I can get this to work -- what is going to be Exhibit 18. (Exhibit 18 Sample CPCS 1.550 with SG-210 Alpha marked for identification.)	12:30:10	12:30:24
17			12:30:27
18	Q. Exhibit 18 is a single photo that's marked as a number followed by CPCS 1.550 with	12:30:25	
19			12:30:28
20			
21			
22			
23			
24			
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1	SG-210 alpha.	12:30:36	
2	A. Correct.	12:30:39	
3	Q. So this is a photo of that SG-210 in the alpha direction or the perpendicular direction under polarized light, correct?	12:30:39	12:30:46
4			12:30:50
5			12:30:52
6	A. Correct.	12:30:52	
7	Q. In 1.550 refractive index liquid?	12:30:53	
8	A. The number preceding that, 3183377, indicates that is Valadez talc baby powder. That baby powder was spiked with SG-210 I look at that sample.	12:30:58	12:31:03
9			12:31:10
10			12:31:16
11			12:31:19
12	Q. Are you sure about that?	12:31:19	
13	A. Yes, I'm sure.	12:31:20	
14	Q. Okay. So this is not an analysis of just straight unadulterated SG-210. This is a spiked sample of the Valadez baby powder?	12:31:34	12:31:40
15			12:31:45
16			12:31:48
17	A. Correct.	12:31:48	
18	Q. Okay. This might be a dumb question, but how do you know what we are looking at is the SG-210?	12:31:49	12:31:56
19			12:31:58
20			12:32:00
21	A. Because it was prepared with the SG-210 first provided by Dr. Longo to Professor Gunter, then from Gunter to Mr. Sanchez, then Mr. Sanchez brought that sample.	12:32:04	12:32:11
22			12:32:17
23			
24			

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<p>1 Q. Okay. When using color to identify a 12:35:38 2 central stop dispersion staining reference, where is 12:35:44 3 the appropriate location on a particle in the gamma 12:35:54 4 direction to identify the representative color? 12:35:59</p> <p>5 A. I am glad you bring this up. That I 12:36:03 6 want to explain. A structure of a mineral like here 12:36:06 7 is a chrysotile. It's a fibrous, fiber bundle. 12:36:16 8 It's consistent with the fiber oils. 12:36:25</p> <p>9 Now, the interface between those 12:36:29 10 fibers will affect the dispersion staining color. 12:36:33 11 Therefore, I think we need to differentiate between 12:36:40 12 the true central stop dispersion staining color 12:36:47 13 which is representative the true refract index of 12:36:54 14 the structure versus those central stop 12:36:59 15 dispersion -- what I call distorted color. Those 12:37:05 16 color is not indicative of the gamma value of the 12:37:09 17 fiber. What I am saying is, even it display a range 12:37:15 18 of color, different color doesn't mean it is a range 12:37:26 19 of refract index. Same is true for 1866 photograph. 12:37:30 20 They show a range of the dispersion staining color, 12:37:38 21 which was interpreted by Dr. Longo as the variation 12:37:44 22 of refract index of the 1866, which is incorrect, 12:37:49 23 because 1866 has a constant value of 1.556 for the 12:37:56 24 gamma direction. Those color which does not 12:38:07</p>	<p>1 objective. It has a three setting. One is central 12:40:12 2 stop. One is annular stop. Another is just -- 12:40:18 3 there is no stop. So in this case when you are in 12:40:26 4 doubt which color is the right one to use, you 12:40:33 5 switch that to the no stop and you close the 12:40:39 6 aperture diaphragm to examine the Becke line. 12:40:46</p> <p>7 Q. I was going to talk about Becke lines 12:40:50 8 later. Becke line analysis is a different form of 12:40:54 9 analysis than phase contrast microscopy, correct? 12:40:58</p> <p>10 MR. HYNES: Objection to the form. 12:41:02</p> <p>11 A. Not phase contrast. There are four 12:41:04 12 method measuring refract index in polarized light 12:41:08 13 microscope. The traditional, the foremost one is 12:41:15 14 Becke line. Later on, there is another method 12:41:21 15 called oblique elimination. However, oblique 12:41:26 16 elimination method is only used for screening 12:41:33 17 purpose to see my liquid is too high or too low 12:41:38 18 until you got the liquid closer to the object, the 12:41:46 19 structure you are measuring. Then you do the Becke 12:41:52 20 line. Becke line is the most accurate method. 12:41:58</p> <p>21 Now, later for the asbestos industry, 12:42:03 22 since it's a commercial operation, it's not a 12:42:08 23 research, they can't afford to spend too much time 12:42:12 24 on a sample. So Becke line -- because Becke line 12:42:19</p>
<p style="text-align: center;">Page 99</p> <p>1 correspond to 1.556, they are distorted due to the 12:38:14 2 interface condition between fibers. I have graphic 12:38:21 3 to explain the formation of the distorted color. 12:38:29</p> <p>4 Q. I believe it's one of your slides? 12:38:37</p> <p>5 A. Yeah. 12:38:39</p> <p>6 Q. I've seen it. It's not what I am 12:38:40 7 asking you about here. Let's look at Exhibit 19 12:38:43 8 here. I have tried to enlarge it a little bit. 12:38:46</p> <p>9 The fiber, this item that you could 12:38:52 10 see in the horizontal direction here in the center 12:38:56 11 of this, if you look at it in the center, there is 12:39:00 12 some golden color, there is some reddish color. On 12:39:03 13 the edges it's kind of purplish. 12:39:06</p> <p>14 When you're -- when you're evaluating 12:39:11 15 what color corresponds to the chart, where do you 12:39:16 16 select the color? On the edges? On the center of 12:39:23 17 the structure? What color do you use when there's 12:39:26 18 multiple colors in a sample like Exhibit 19? 12:39:30</p> <p>19 A. Yes. Now, in order to determine 12:39:35 20 which color to be used to derive the refract index 12:39:43 21 of this fiber, first you will have to determine 12:39:52 22 which is the true, I call it true central stop 12:39:57 23 dispersion staining color. The way to distinguish 12:40:02 24 them -- see, this is a McCrone dispersion staining 12:40:07</p>	<p style="text-align: center;">Page 101</p> <p>1 you have to change the liquid. You put a liquid. 12:42:23 2 You find it's higher than the structure. Now you 12:42:28 3 prepare another sample, use a lower liquid until 12:42:34 4 they got the match. So it's cumbersome. It's 12:42:40 5 time-consuming. It's not for the commercial 12:42:45 6 operation. 12:42:48</p> <p>7 Then the third method is the 12:42:49 8 dispersion staining. 12:42:54</p> <p>9 Q. Did you perform a Becke line analysis 12:42:57 10 of this particle? 12:43:00</p> <p>11 A. I did. 12:43:02</p> <p>12 Q. Is that part of your Becke line 12:43:02 13 folder? 12:43:05</p> <p>14 A. Not -- which folder -- 12:43:06</p> <p>15 Q. I'm sorry. I shouldn't have thrown 12:43:10 16 that at you. Is that part of the materials that you 12:43:11 17 produced? 12:43:15</p> <p>18 A. Actually, I think in the folder of 12:43:15 19 the glass, I want use the glass, the Cargille glass 12:43:18 20 in 1.55 and 1.560. That folder, I want use the 12:43:26 21 glass to show what it distorted central stop 12:43:35 22 dispersion staining color versus the Becke line. 12:43:40 23 And how do you use Becke line to -- 12:43:45</p> <p>24 Q. I see, I see that folder. I can talk 12:43:50</p>

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1 to you about it later.	12:43:55	1 of the micrometer image with the gamma value, gamma	12:48:05
2 I am asking specifically with this	12:43:56	2 dispersion staining color in central stop dispersion	12:48:13
3 SG-210 fiber, did you specifically do a Becke line	12:43:58	3 mode.	12:48:22
4 analysis of this?	12:44:02	4 Q. Okay. We will look at what we are	12:48:22
5 A. Yes, I did.	12:44:04	5 going to mark as Exhibit 21.	12:48:25
6 Q. Is that included in the photos that I	12:44:05	6 A. Yes. This is the corresponding	12:48:28
7 have? I don't know that I have seen that.	12:44:08	7 central stop dispersion staining image.	12:48:31
8 A. I did not take the picture, because	12:44:10	8 (Exhibit 21 Micrometer 318337 CSDS 1.550	12:49:07
9 it just flip to switch, then you observe. Which is	12:44:13	9 talc particle gamma marked for identification.)	12:49:14
10 automatic kind of operation for me. See, I keep	12:44:27	10 Q. Okay. Let me do this: Okay. So	12:48:36
11 switching between the central stop and Becke line.	12:44:31	11 this image that we are looking at, which is	12:49:02
12 Q. Okay. So for this particular fiber,	12:44:37	12 Exhibit 21, is entitled "Micrometer 318337 CSDS	12:49:05
13 which color is the color that is the right color in	12:44:45	13 1.550 talc particle gamma" and this image is what	12:49:13
14 comparison to the CSDS chart -- CSDS?	12:44:49	14 you were saying is the same image as Exhibit 19?	12:49:20
15 A. That is the color corresponding to	12:44:56	15 A. No. This is -- wait a second. You	12:49:24
16 the 1.560 refract index.	12:45:01	16 mean this? I think you show a Becke line image.	12:49:30
17 Q. What color is that? We have, we have	12:45:06	17 That is the same of this. Not the one without	12:49:38
18 a golden, we have a reddish, we have purple, we have	12:45:12	18 micrometer. No. This is not.	12:49:43
19 a little bit of blue in there. What color is the	12:45:15	19 Q. Not this one?	12:49:46
20 color that you're then comparing to the CSDS chart?	12:45:19	20 MR. HYNES: Exhibit 20.	12:49:47
21 A. I believe reddish purple.	12:45:25	21 MR. BRALY: Exhibit 20 he already	12:49:51
22 Q. Okay. So for this fiber that's	12:45:29	22 told me wasn't.	12:49:52
23 Exhibit 19, you're identifying that as corresponding	12:45:33	23 A. This is not. Whenever there is no	12:49:53
24 with reddish purple?	12:45:38	24 micrometer in the file name, it is not a sample	12:49:59
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1 A. Correct.	12:45:39	1 prepared on the micrometer.	12:50:04
2 Q. Okay. There is no -- there is no	12:45:40	2 MR. HYNES: Show Exhibit 20. 21 and	12:50:10
3 scale bar for this photograph, correct?	12:45:59	3 20 I think relate to one another.	12:50:13
4 A. In this image, it doesn't, but I took	12:46:03	4 MR. BRALY: They both come from the	12:50:16
5 a series image with the scale bar. There is one	12:46:09	5 micrometer folder.	12:50:18
6 sample I prepare the sample on a micrometer. So	12:46:14	6 BY MR. BRALY:	12:50:19
7 it's superimposed on the micrometer to show the	12:46:24	7 Q. This is Exhibit 20. This is	12:50:19
8 scale of the particle size, which in the photo	12:46:30	8 Exhibit 21. Did you superimpose a micrometer over	12:50:23
9 probably was named micrometer or something like	12:46:34	9 Dr. Longo's findings?	12:50:31
10 that.	12:46:38	10 A. No. This sample I prepared by	12:50:33
11 Q. So there is -- I am going to show an	12:46:47	11 sprinkle the baby powder on the micrometer slide	12:50:40
12 image here and ask you if this is the image that	12:47:07	12 instead a regular blank slide because I want the	12:50:49
13 corresponds with that one.	12:47:10	13 micrometer image showing same time in the field of	12:50:55
14 A. Yes. See the background, this is a	12:47:12	14 view.	12:51:01
15 sample prepared on the surface of the micrometer.	12:47:16	15 Q. The particle that we are looking at	12:51:01
16 Q. What I am asking is, is the image we	12:47:22	16 in Exhibit 21, right here, that's golden. Looks	12:51:03
17 are looking at -- I am mark this next one as	12:47:25	17 like there might be some greenish lineation and some	12:51:11
18 Exhibit 20.	12:47:27	18 reddish on the outside, what is that?	12:51:16
19 (Exhibit 20 Micrometer 3183377 at Focus	12:47:27	19 A. These are the distorted dispersion	12:51:20
20 1.550 Talc Particle marked for identification.)	12:47:28	20 staining color of the talc elongated talc particle.	12:51:25
21 Q. Is this the same image as Exhibit 19?	12:47:28	21 Q. So that's talc?	12:51:31
22 A. No.	12:47:32	22 A. This is talc.	12:51:32
23 Q. No?	12:47:33	23 Q. Okay. And this is a sample that you	12:51:34
24 A. But I am sure we will find an image	12:48:02	24 prepared?	12:51:38

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1	A. Correct. 12:51:38	1	distribution of the talc versus the chrysotile 12:54:33
2	Q. Okay. Going back to what my question 12:51:39	2	spiked in the talc sample. It's two population. 12:54:38
3	had been, for Exhibit 19, you do not have a scale 12:51:43	3	However, the peak of the talc, the particle size is 12:54:44
4	bar for this photograph, correct? 12:51:49	4	smaller than the chrysotile average size. However, 12:54:53
5	A. Because I am taking the same 12:51:51	5	the two curve is overlap, which means there are 12:55:00
6	objective, does that scale bar applicable to this. 12:51:57	6	chrysotile fiber similar or even smaller than this. 12:55:08
7	When I -- if I process image, I will type the nature 12:52:04	7	However, if you measure all the chrysotile in a 12:55:14
8	of the sample and also I will put the scale bar on 12:52:13	8	sample, you plot it, it's the particle size is 12:55:20
9	the image. But this is the raw data. 12:52:17	9	larger than the talc. 12:55:27
10	Q. Okay. 12:52:23	10	Also, I took some SEM image of the 12:55:31
11	A. It's not been prosed. I did not have 12:52:23	11	spiked sample. On the SEM, it's easier to find the 12:55:37
12	time to put the scale bar on that image. 12:52:28	12	chrysotile compared on the optical microscope. 12:55:48
13	Q. Okay. So if we look at Exhibit 21, 12:52:33	13	Q. Is that the wet-sieved -- 12:55:55
14	the particle on Exhibit 20 -- first of all, the 12:52:37	14	A. That label the wet sieve, about 400 12:56:04
15	field of view for Exhibit 19 and Exhibit 21 is the 12:52:41	15	mesh sieve, yeah. 12:56:08
16	same field of view, correct? 12:52:44	16	Q. Now, all of what we are talking 12:56:11
17	A. This are two different sample. 12:52:47	17	about, this work here with Exhibits 19, 20, and 21, 12:56:13
18	Q. Not my question. I understand they 12:52:50	18	Exhibit 18 as well, as well as the files that you're 12:56:17
19	are two different samples. 12:52:52	19	talking about with the wet-sieved chrysotile, all of 12:56:21
20	A. The same field of view, same 12:52:53	20	this was done the month after you issued your expert 12:56:25
21	objective. 12:52:56	21	report in the MDL case and the chemical arts case? 12:56:31
22	Q. Okay. So if we were to superimpose 12:52:56	22	A. Correct. The MDL report was issued 12:56:41
23	the micrometer from Exhibit 21 on to Exhibit 19, 12:52:59	23	on May the 21st. The work I did is between 15th to 12:56:44
24	that would be a fair thing to do? 12:53:06	24	17th of June, the next month. 12:56:53
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1	A. Correct. 12:53:09	1	Q. I want to continue kind of 12:57:53
2	Q. Exhibit 19 is an image of a 12:53:10	2	identifying various things that you took pictures 12:57:55
3	chrysotile fiber, correct? 12:53:14	3	of. 12:57:58
4	A. Correct. 12:53:16	4	Exhibit 22 is an image what is 12:57:58
5	Q. Exhibit 19, this one. Okay? 12:53:17	5	purported to be this SG-210 chrysotile in 1.560 12:58:03
6	Exhibit 21 is an image of fibrous talc? 12:53:21	6	refractive index liquid, correct? 12:58:09
7	A. Correct. 12:53:25	7	A. Correct. 12:58:13
8	Q. How close in size are these two 12:53:26	8	(Exhibit 22 3183377 with SG210 chrysotile in 12:58:13
9	fibers? 12:53:34	9	1.560 alpha marked for identification.) 12:58:14
10	A. I think they are close. 12:53:36	10	Q. Okay. And again it is your position 12:58:14
11	Q. They appear to be close, don't they? 12:53:38	11	or your understanding that what you've taken a 12:58:21
12	A. They are. 12:53:40	12	photo of is the Valadez talc sample spiked with 12:58:25
13	Q. One of your criticisms of Dr. Longo's 12:53:44	13	SG-210? 12:58:29
14	work that chrysotile fibers in fact don't occur at 12:53:47	14	A. Correct. 12:58:31
15	the same size. 12:53:51	15	Q. What percentage by weight, if you 12:58:31
16	A. No. If you look the one, the 19 -- 12:53:55	16	know, SG-210 was spiked into the sample? 12:58:35
17	can you put 19? 12:53:59	17	A. I believe it's 1 percent or 12:58:39
18	Q. Yes, sir. 12:54:00	18	.1 percent, either it's 1 percent or .1 percent. 12:58:43
19	A. You see, this structure is larger 12:54:04	19	Q. There is a big difference between 12:58:48
20	than the talc particle. 12:54:09	20	those two. 12:58:49
21	Q. Sure. They are not exact matches. 12:54:13	21	A. That's right. 12:58:50
22	But they are close in size, are they not? 12:54:16	22	Q. You don't know? 12:58:51
23	A. You see, if you -- I think the best 12:54:19	23	A. I don't remember. I believe it's 12:58:55
24	example is the USP study. They have two particle 12:54:25	24	1 percent. 12:58:59

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1	(Exhibit 23 3183377 With SG210 Chrysotile in 12:58:59	1	MR. BRALY: It wouldn't show up on 13:02:09
2	1.560 Gamma marked for identification.) 12:59:01	2	the record. 13:02:10
3	Q. Exhibit 23 is that same sample but 12:59:01	3	BY MR. BRALY: 13:02:42
4	this time 1.560 refractive index fluid, correct? 12:59:09	4	Q. So as you go from south to north in 13:02:44
5	A. Correct. 12:59:15	5	this middle, section, it goes from dark blue to 13:02:46
6	Q. So here is where I am going to ask 12:59:16	6	light blue, to the top you get this greenish reddish 13:02:53
7	questions about the PLM process that maybe I don't 12:59:19	7	menagerie? 13:02:57
8	understand fully. Exhibit 19 is the SG-210 and 12:59:22	8	A. Yes. 13:02:59
9	1.550 RI fluid? 12:59:36	9	Q. Are you saying that you switched the 13:02:59
10	A. Yes. 12:59:39	10	oculus to remove the central stop to evaluate the 13:03:04
11	Q. Exhibit 23 is -- 12:59:40	11	Becke line? 13:03:08
12	A. 560. 12:59:42	12	A. No. The objective -- 13:03:09
13	Q. I hate to be parental about this, but 12:59:50	13	Q. The objective. I'm sorry. 13:03:09
14	you have to let me finish the question. 12:59:53	14	(Reporter asks for clarification.) 13:03:09
15	A. Sorry. 12:59:55	15	THE WITNESS: The dispersion 13:03:16
16	Q. Exhibit 19 and Exhibit 23, they are 13:00:00	16	staining, dispersion staining objective. 13:03:18
17	not the same fiber, right? 13:00:04	17	Q. And by doing that, you could evaluate 13:03:35
18	A. No. 13:00:07	18	the Becke line? 13:03:39
19	Q. Right. I thought so. I just wanted 13:00:08	19	A. Correct. 13:03:42
20	to make sure. Okay. 13:00:11	20	Q. And in evaluating the Becke line, am 13:03:42
21	Now, for Exhibit 23 and the 1.560, 13:00:13	21	I correct that you bring the image slightly out of 13:03:48
22	again, it appears to be predominantly blue, but 13:00:21	22	focus to evaluate the border between the fiber and 13:03:52
23	there is little blue in the middle and then this 13:00:26	23	the fluid? 13:03:56
24	blade of yellowish on the outside and this little 13:00:29	24	A. No. The Becke line you need to focus 13:03:57
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1	starburst pattern here on the central left side. 13:00:32	1	on that. You did not change the focus. So when I 13:04:00
2	And then on the edges on the left side, we have a 13:00:37	2	switch between the central stop dispersion staining 13:04:05
3	line of red and then some lighter blue and some 13:00:40	3	mode to the Becke line mode you don't change the 13:04:11
4	darker blue even get a little bit of greenish up 13:00:43	4	focus. 13:04:18
5	here in the west, northwest of the structure. 13:00:48	5	Q. Isn't it a critique of using Becke 13:04:19
6	What color do you identify this fiber 13:00:53	6	lines to evaluate refractive index that it is not as 13:04:22
7	with for purposes of reference to the CSDS chart? 13:00:57	7	suitable for smaller particles as it is for larger 13:04:26
8	A. Okay. This photograph actually the 13:01:02	8	particles? 13:04:30
9	fiber is the horizontal section. Okay. They are 13:01:08	9	A. It depends. When it's not suitable 13:04:31
10	not continuous to this part. This fiber I am 13:01:16	10	is you cannot determine the movement of the Becke 13:04:38
11	looking at, it's not as I said. It is not 13:01:22	11	line or to distinguish the Becke line -- see, the 13:04:44
12	continuous to this end. 13:01:28	12	Becke line, when the particle and the liquid, when 13:04:54
13	Q. So because nobody is ever going to 13:01:31	13	they are very close, then the Becke line dispersed. 13:05:00
14	know what you're pointing at on the written record, 13:01:33	14	So there is a Becke line inside the structure and 13:05:07
15	you're saying the section to the right of the eye 13:01:39	15	also there is a Becke line dispersed Becke line 13:05:14
16	starburst is the fiber you're evaluating? 13:01:42	16	outside the structure in the liquid. That is how 13:05:17
17	A. That's correct. And the color is 13:01:45	17	you used to determine the match which Dr. Bloss book 13:05:26
18	this deep blue I confirm that by Becke line. 13:01:49	18	has a famous chart, Becke line chart which people 13:05:36
19	Q. That deep blue color on the southern 13:01:56	19	used to determine a match or dis-match, mismatch. 13:05:41
20	edge of the fiber is the color that you would 13:02:00	20	Q. Does this image capture the entire 13:06:03
21	identify with that fiber? 13:02:02	21	field of view that was being observed through the 13:06:06
22	A. Correct. 13:02:04	22	microscope? 13:06:09
23	MR. PLACITELLA: Are you able to put 13:02:05	23	A. Correct. Every image in our database 13:06:09
24	the cursor over that? 13:02:06	24	in the raw data we sent to you, they are the full 13:06:15

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1 image. That's the only way to catch it.	13:06:19	1 Q. It's not. I will drag it over. It's	13:10:25
2 Q. You do understand that you can take a	13:06:24	2 a folder. These are the folders that you provided.	13:10:31
3 digital image capture of what's being seen through a	13:06:27	3 A. Okay.	13:10:39
4 microscope with less than the full field of view,	13:06:31	4 Q. Okay? It's a folder called 38 --	13:10:39
5 correct? You understand that's a possibility?	13:06:36	5 3183377 with M12001.1.550 and then another folder	13:10:51
6 A. There might be possibility. However,	13:06:42	6 1.560.	13:11:00
7 the software come with this like a microscope. I	13:06:46	7 A. Yes.	13:11:03
8 forgot the name of the software name. Star Wars	13:06:53	8 Q. In the 1.550 you have ten different	13:11:03
9 era. Anyway, it come with the system, the monitor,	13:06:59	9 particles in alpha and in gamma?	13:11:07
10 the software image software and the microscope.	13:07:02	10 A. Correct.	13:11:10
11 There is one complete system. So when you click the	13:07:08	11 Q. And the 1.560 folder you have five	13:11:10
12 capture image, it capture.	13:07:14	12 different particles in alpha and in gamma?	13:11:14
13 I don't know if they have a function,	13:07:17	13 A. Correct.	13:11:21
14 for example, the cropped image or not. However,	13:07:23	14 Q. What is the M12001? What is that?	13:11:21
15 when we do this analysis for each field of view we	13:07:29	15 A. It is the Coalinga chrysotile from	13:11:25
16 examine, we just click the capture. So it capture	13:07:36	16 the RTI. It's a California Calidria chrysotile.	13:11:33
17 the whole image on the screen.	13:07:41	17 M12001 indicate it is proficient testing code. So	13:11:45
18 Q. Okay. So one of the criticisms that	13:07:43	18 the M represent a PLM. One indicate that the first	13:11:55
19 you raised -- and we are going to look at it	13:07:49	19 one in that year NVLAP issued two proficient testing	13:12:05
20 later -- had to do with the size of the field of	13:07:51	20 every year. One is in the first half of the year.	13:12:14
21 view for some of Dr. Longo's work?	13:07:53	21 Two being the second half of the year. Then 2001,	13:12:20
22 A. Yeah, correct.	13:07:56	22 which means that's the year of the test. So M12001	13:12:26
23 Q. Point in fact is, you don't know if	13:07:57	23 meant it is the first proficient testing conducted	13:12:35
24 that image was capturing the entire field of view or	13:08:00	24 by NVLAP in the year 2001. It is a first time or	13:12:42
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1 if it was a cropped image from what was being	13:08:04	1 the last time NVLAP use a Calidria chrysotile for	13:12:51
2 displayed on the monitor, correct?	13:08:07	2 the test.	13:12:59
3 A. I don't know. However, in software	13:08:10	3 Q. So the folder with the M12001 is	13:12:59
4 they used to capture the digital image, usually	13:08:17	4 another -- is it your testimony that that is another	13:13:06
5 there is no cropping. There is no cropping.	13:08:26	5 batch of California chrysotile or Calidria?	13:13:09
6 Q. I appreciate what you're saying --	13:08:34	6 A. Correct.	13:13:14
7 A. Another important -- let me finish.	13:08:36	7 Q. Okay. And again, this was something	13:13:20
8 Q. Sure.	13:08:38	8 that you didn't analyze until after you had already	13:13:31
9 A. Another important too is the particle	13:08:39	9 issued your expert report in this case?	13:13:34
10 size in the image, which is provided another	13:08:43	10 A. Correct.	13:13:37
11 criteria to say is this a full field of view image	13:08:50	11 MR. BRALY: I am going to mark as	13:13:53
12 or as a cropped image or part of the image. Because	13:08:58	12 Exhibit 24, 25 and 26. 24 is going to be titled	13:13:55
13 the particle size on the two images, they are not	13:09:05	13 Particle 1, M2000 -- M -- yeah, M2001, 1.250 gamma.	13:14:00
14 the same.	13:09:11	14 Exhibit 25 is going to be Particle 2. And	13:14:19
15 Q. So I appreciate what you're saying	13:09:13	15 Exhibit 26 is going to be Particle 3. There are 10	13:14:20
16 about whatever default function for capturing images	13:09:19	16 particles, but we are going to look at these as	13:14:24
17 are. You actually are unaware if you're able to	13:09:24	17 representative.	13:14:26
18 crop an image in the software provided with these	13:09:29	18 (Exhibit 24 Particle 1 M2001 1.250 Gamma	13:14:12
19 microscopes or not as you sit here today, right?	13:09:32	19 marked for identification.)	13:14:27
20 A. No, I don't. I'm not.	13:09:36	20 (Exhibit 25 Particle 2 M2001 1.250 Gamma	13:14:19
21 Q. You took photos of ten different	13:10:02	21 marked for identification.)	13:14:28
22 particles in a folder with the same number, 3183377,	13:10:05	22 (Exhibit 26 Particle 3 M2001 1.250 Gamma	13:14:21
23 but this one was called with M12001.	13:10:17	23 marked for identification.)	13:14:34
24 A. Is that under screen?	13:10:24	24 Q. Sir, in Exhibit 24, what are you	13:14:34

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1 identifying here with that arrow?	13:14:48	1 this file name in any sense of what this is.	13:19:03
2 A. Yeah. This is the Coalinga	13:14:51	2 A. It is a Valadez sample.	13:19:06
3 chrysotile from California, Union Carbide's.	13:14:56	3 Q. Okay. Well, I know that now. I	13:19:09
4 Q. Is this entire sample Calidria?	13:15:01	4 appreciate it.	13:19:10
5 A. Yes.	13:15:10	5 A. Okay.	13:19:13
6 Q. So there's no talc to your knowledge	13:15:12	6 Q. What is Exhibit 24? What are we	13:19:13
7 in this sample?	13:15:16	7 looking at here in the middle of the screen with	13:19:16
8 A. Now I remember. This is the Coalinga	13:15:22	8 that arrow on it?	13:19:18
9 chrysotile-spiked talc, Chinese talc. It's not pure	13:15:29	9 A. That is a chrysotile, gamma	13:19:22
10 Coalinga chrysotile. It's a spiked sample.	13:15:39	10 direction.	13:19:26
11 Q. I'm confused about this because you	13:15:58	11 Q. Is that a fiber?	13:19:36
12 have a whole other folder structure that you	13:16:01	12 A. It is rather dark. It is the fiber.	13:19:46
13 produced called Chinese Talc Milled With 1866	13:16:04	13 I think there is a same picture of this fiber in the	13:19:53
14 Chrysotile and then you have another folder entirely	13:16:09	14 alpha direction. I believe the alpha direction	13:20:01
15 called Chinese Talc Milled with SG-210 Chrysotile.	13:16:12	15 should be clearer. If you find a particle 1 alpha,	13:20:04
16 That's not what this folder is.	13:16:17	16 can you show that image?	13:20:13
17 A. But this folder is not SG-210. It is	13:16:21	17 Q. I can. I will need to mark it as a	13:20:15
18 the RTI, the Coalinga chrysotile. It's two Calidria	13:16:25	18 new exhibit. Give me a second.	13:20:18
19 chrysotile.	13:16:34	19 A. For each particle, we took a gamma	13:20:20
20 Q. Yes, but what I am saying the folders	13:16:35	20 and alpha.	13:20:24
21 that you gave me were not identified as this being a	13:16:37	21 Q. So this will be Exhibit 27, which is	13:20:28
22 spiked sample.	13:16:40	22 particle 1 in the alpha direction.	13:20:31
23 A. That probably they did not indicate	13:16:42	23 (Exhibit 27 Particle 1 M2001 1.550 CSDS	13:20:34
24 in the file name. However, that a two spiked	13:16:47	24 Alpha marked for identification.)	13:20:38
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1 sample.	13:16:52	1 A. Yeah. That's very clear. Can you	13:20:38
2 MR. HYNES: I will note for the	13:16:52	2 see the fiber?	13:20:41
3 record that the folder from which this originated is	13:16:54	3 Q. No.	13:20:42
4 3183377 with M12001 1.550. I think Dr. Su's	13:16:56	4 A. Do you want me to find it out?	13:20:45
5 testimony previously is that 3183377 is the	13:17:09	5 Q. Sure.	13:20:47
6 designation for that Valadez Chinese source.	13:17:27	6 A. That I remember. In the alpha	13:20:50
7 THE WITNESS: Yeah, that file name	13:17:31	7 direction, it's more clearer. You see? From here,	13:20:52
8 reflect it is NVLAP chrysotile-spiked Valadez talc	13:17:33	8 up here.	13:21:00
9 powder. Let me make it clear.	13:17:47	9 Q. Okay. It's like a blue streak that's	13:21:00
10 BY MR. BRALY:	13:17:53	10 running just to the left of that bright light blue	13:21:05
11 Q. Until you told me that, how was I to	13:17:53	11 blob?	13:21:10
12 know that 3183377 was a reference to the Valadez	13:17:57	12 A. Correct.	13:21:11
13 talc sample that had been spiked?	13:18:03	13 Q. All right. So oriented in the gamma	13:21:12
14 A. See, the number I believe -- you	13:18:07	14 direction in Exhibit 24, you realize that the arrow	13:21:33
15 should be able to find that in one of Dr. Longo's	13:18:12	15 isn't pointing to the -- what you had previously	13:21:36
16 report. Yes, the numerical code.	13:18:18	16 been indicating?	13:21:40
17 Q. Okay.	13:18:24	17 A. If you look very carefully, it's	13:21:42
18 A. So when he sent that chrysotile,	13:18:25	18 pointed to the end of the fiber.	13:21:46
19 Calidria chrysotile to Dr. Gunter, I believe it is	13:18:33	19 Q. Okay.	13:21:49
20 with that number. That's why they continue -- yeah,	13:18:42	20 A. Yeah.	13:21:50
21 I saw something in a document they received a sample	13:18:47	21 Q. What color are you associating with	13:21:51
22 with that number on.	13:18:54	22 that fiber for purposes of this CSDS chart?	13:21:54
23 Q. In what you produced to me I don't	13:18:55	23 A. Magenta.	13:22:02
24 know what 3183377 is. There is no indication in	13:18:58	24 Q. That's Exhibit 24. Okay.	13:22:09

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Page 122		Page 124	
1	Exhibit 25 is particle 2 still in 13:22:33	1	A. It is LED light source. 13:26:25
2	1.550 refractive index oil? 13:22:39	2	Q. What color temperature was the white 13:26:30
3	A. Correct. 13:22:44	3	light in that bulb? 13:26:33
4	Q. From that same series of the 2001 13:22:44	4	A. I did not measure that, but I switch 13:26:36
5	NVLAP Coalinga chrysotile? 13:22:48	5	in the daylight filter, the building in the 13:26:39
6	A. Correct. 13:22:52	6	microscope. That daylight filter is specifically 13:26:46
7	Q. What color are you identifying with 13:22:52	7	designed for that light source to make it the 13:26:51
8	what you identified here? 13:22:55	8	daylight color temperature. 13:26:56
9	A. Red purple. 13:22:57	9	Q. That's built in to the microscope you 13:26:58
10	Q. Red purple, okay. Exhibit 26 is 13:23:06	10	were using? 13:27:00
11	particle 3 from that same grouping which is not on 13:23:16	11	A. Yes. 13:27:02
12	your screen. There it is. Is the fiber that is 13:23:20	12	Q. Remind me. What were as the 13:27:02
13	curved structure that kind of wraps around the 13:23:34	13	microscope you were using? 13:27:04
14	clamshell of the larger structure in the center of 13:23:39	14	A. It's Leica DM2700 P, the model 13:27:06
15	that screen? 13:23:42	15	number. 13:27:12
16	A. It looks to. However, can you show 13:23:43	16	Q. You said that's the same microscope 13:27:12
17	the alpha image of the same particle. Particle 3 13:23:47	17	that Bill Longo's lab uses. 13:27:15
18	alpha. 13:23:52	18	A. Correct. 13:27:18
19	Q. Give me a second to rename it. 13:23:54	19	Q. You have no concerns about using an 13:27:19
20	(Exhibit 28 Particle 3 M2001 1.550 CSDS 13:24:08	20	LED bulb even though you don't know the color 13:27:21
21	Alpha marked for identification.) 13:24:08	21	temperature of the light coming out of it? 13:27:25
22	Q. Exhibit 28 will be particle 3 alpha. 13:24:09	22	A. Because the daylight filter will 13:27:27
23	A. That's right. Usually the alpha 13:24:15	23	correct that. 13:27:31
24	direction is the clearer. You can see a fibrous 13:24:18	24	Q. Okay. And that's a standard feature 13:27:32
Page 123		Page 125	
1	structure in the middle. 13:24:25	1	on that microscope? 13:27:34
2	Q. That's kind of -- for Exhibit 28 it 13:24:27	2	A. That's right. That is the 13:27:34
3	is running the left edge of that center mass 13:24:32	3	top-of-line microscope. 13:27:37
4	structure? 13:24:35	4	Q. Nice microscope. You do recognize 13:27:38
5	A. Mm-hmm. 13:24:36	5	that there are different color temperatures of white 13:27:43
6	Q. Is that right? 13:24:36	6	light, correct? 13:27:46
7	A. Correct. 13:24:37	7	A. Oh, yes. I do. 13:27:46
8	Q. Okay. Going back to Exhibit 26, is 13:24:37	8	Q. You can have a higher color 13:27:49
9	it again are we talking about this line that runs in 13:24:42	9	temperature which is going to be hued a little bit 13:27:51
10	the outside of this larger mass structure? 13:24:49	10	more yellowish; you can have a colder-color 13:27:55
11	A. Yeah, that's the same structure. 13:24:51	11	temperature which is going to be more bluish, 13:27:59
12	However, we are looking at the horizontal one. 13:24:54	12	correct? 13:28:02
13	Q. Very true, yes. 13:24:57	13	A. Correct. 13:28:02
14	A. Horizontal part. 13:24:59	14	Q. And it all falls in the range of 13:28:02
15	Q. What color do you identify with this 13:25:00	15	white light, correct? 13:28:06
16	structure for purposes of the CSDS chart? 13:25:04	16	A. No. The white light is daylight. 13:28:07
17	A. Red purple. 13:25:08	17	Q. Forgive me for that. Yes. 13:28:13
18	Q. Red purple. Let me kind of jump 13:25:11	18	Incandescent bulbs, tungsten bulbs, LED illumination 13:28:19
19	around with you just a little bit and then we will 13:26:06	19	sources, they can all have different temperature of 13:28:25
20	probably get to a point where we can take a break, 13:26:09	20	white, right? 13:28:26
21	okay? 13:26:11	21	A. Different color temperature. 13:28:27
22	A. Okay. 13:26:11	22	Q. Microscopes have software and filters 13:28:31
23	Q. What type of illumination bulb were 13:26:12	23	built into them to correct for this, correct? 13:28:35
24	you using when you took these images in June? 13:26:23	24	A. As far as I know, Leica is the only 13:28:38

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1 model I saw; for example, the Olympus BH-2 model, 13:28:43	13:28:43	1 ask you a couple questions about that. 13:32:39	
2 which many asbestos lab used in the past. Now, 13:28:53		2 This process of central stop 13:32:42	
3 later on, Olympus put out a more advanced model 13:28:59		3 dispersion staining is a process, right? 13:32:49	
4 which cost a lot more expensive than the BH-51, BH-4 13:29:04		4 A. It is a technique for measuring refract index. 13:32:53	
5 series, BH-5 series, even have a BH-6 series. Then 13:29:13		5 refract index. 13:32:58	
6 those Olympus are very well built. It will have a 13:29:20		6 Q. Right. It's a method. It's a way of 13:33:00	
7 complete system, a custom design daylight filter 13:29:25		7 doing something? 13:33:02	
8 with the light source. Same as the Leica. 13:29:34		8 A. Correct. 13:33:03	
9 Q. If there is no daylight filter, say, 13:29:44		9 Q. The method can be followed up to a 13:33:03	
10 in an older Olympus microscope like you're talking 13:29:47		10 point to where it becomes the discretion of an 13:33:08	
11 about, are there software adjustments to account for 13:29:51		11 analyst in either how the image is prepared or how 13:33:13	
12 white balancing images? 13:29:58		12 they're interpreting it, correct? 13:33:18	
13 A. Not I'm aware of, because BH-2 13:30:01		13 MR. HYNES: Form, vague, overbroad. 13:33:20	
14 microscope does not come with a digital camera and 13:30:07		14 You can answer. 13:33:23	
15 the image software. But the Leica did -- does. 13:30:14		15 A. I will say the key factor using 13:33:24	
16 Q. So I don't have instance recall of 13:30:19		16 correctly use the dispersion staining technique to 13:33:34	
17 every microscope that MAS has ever used. Is the 13:30:24		17 measure refract index starting with the calibration 13:33:38	
18 Olympus BH-2 the one you were aware of them ever 13:30:28		18 of the dispersion staining color, which I discussed 13:33:45	
19 using? 13:30:33		19 in detail in a paper couple years ago. I have the 13:33:50	
20 A. I don't recall when I did the 13:30:34		20 whole step-wise procedure, like SOP, plus all the 13:33:58	
21 on-site, but most likely in a year that was 2006 13:30:37		21 tools which means all the conversion tables to use. 13:34:04	
22 they are more likely to have the Olympus BH-2. As I 13:30:45		22 Q. Correct. So if you follow those 13:34:10	
23 said, Olympus BH-2 and the Nikon H4, these two 13:30:50		23 steps and you get to a point where you're dealing 13:34:12	
24 models are the working horse for asbestos lab. They 13:31:01		24 with the discretion of the analyst, right, you will 13:34:16	
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1 are using either Olympus or Nikon. 13:31:05		1 get to a point where the analyst has to make an 13:34:20	
2 A few lab use a very cheap 13:31:09		2 interpretation of what they are seeing, correct? 13:34:22	
3 microscope, Meiji, M-e-i-j-i. That is a model, but 13:31:15		3 MR. HYNES: Overbroad. 13:34:25	
4 that microscope really is too poor builded [sic]. 13:31:23		4 A. Yes. 13:34:29	
5 Q. Okay. To answer my question, you 13:31:28		5 Q. Just like you made an interpretation 13:34:29	
6 don't know if MAS ever used the Olympus BH-2, but 13:31:30		6 of the exhibits that we just looked at about the 13:34:31	
7 you think if they did it would have been back in 13:31:34		7 colors associated with them, correct? 13:34:33	
8 2006? 13:31:37		8 A. Correct. 13:34:35	
9 A. Correct. 13:31:39		9 Q. If you follow the steps up to the 13:34:37	
10 Q. Okay. Since MAS began doing 13:31:39		10 point where you're making a subjective 13:34:40	
11 polarized light microscopy with cosmetic talc, do 13:31:43		11 interpretation of the colors that you're evaluating, 13:34:44	
12 you know if they've used microscopes other than the 13:31:50		12 then it is reasonable that scientists may disagree 13:34:49	
13 Leica? 13:31:52		13 about the interpretation, correct? 13:34:53	
14 A. No, I don't. 13:31:53		14 MR. HYNES: Incomplete hypothetical, 13:34:56	
15 Q. You don't know? 13:31:55		15 overbroad. 13:34:58	
16 A. Okay. But I know this Leica 13:31:56		16 A. No. 13:34:59	
17 microscope, I think they start using that two years 13:31:58		17 Q. Reasonable scientists can't disagree 13:35:00	
18 ago. Because if you looked at report, prior to 13:32:05		18 on those things? 13:35:03	
19 that, the image looks so yellowish-brownish and the 13:32:11		19 A. You have to check Becke line. You 13:35:04	
20 color temperature is skewed to the warm, to the 13:32:18		20 see, when you make that decision, you need to check 13:35:10	
21 yellow-red. Now, suddenly the image become well 13:32:22		21 image with Becke line. If you did that and your 13:35:17	
22 white balanced, then which means is the Leica 13:32:30		22 system is well calibrated, then you will get the 13:35:23	
23 microscope. 13:32:37		23 correct results. If you only look at the dispersion 13:35:29	
24 Q. Before we take our break, I want to 13:32:37		24 staining image without checking with the Becke line, 13:35:37	

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1 you may not.	13:35:43	1 Q. To the extent that McCrone reported	13:50:09
2 Q. Okay. In this grouping of -- in your	13:35:44	2 finding chrysotile in Johnson & Johnson's Baby	13:50:12
3 authorship, in your peer-reviewed publications, is	13:35:55	3 Powder, by reputation alone, you would tend to	13:50:20
4 there a paper you can think of that you've authored	13:35:59	4 believe that they were accurate?	13:50:25
5 that outlines the requirement to confirm your CSDS	13:36:03	5 MR. HYNES: Overbroad. Calls for	13:50:27
6 image against the Becke line to ensure that you're	13:36:13	6 speculation.	13:50:29
7 not reading a reflection or some other distortion?	13:36:18	7 A. I'm not aware -- McCrone has passed	13:50:29
8 A. Beside my paper?	13:36:24	8 away quite a number of years ago, so since then, I	13:50:34
9 Q. No. I am asking which papers say	13:36:25	9 think I retired on 2006. I have almost no	13:50:42
10 that.	13:36:28	10 connection with McCrone.	13:50:52
11 A. My papers say that.	13:36:29	11 But before my retirement, I	13:50:55
12 Q. You have a lot of papers.	13:36:30	12 periodically go to Inter/Micro, the meeting in	13:51:02
13 A. Yes.	13:36:32	13 Chicago. But after I retired, I think I only go to	13:51:05
14 Q. I am wondering if you can be more	13:36:32	14 some Johnson & Johnson conference, GSA conference	13:51:09
15 specific.	13:36:34	15 and SDM conference. I believe I stop going to	13:51:16
16 A. I think my 2022, 2023 paper. There	13:36:36	16 Chicago for the Inter/Micro, which is good meeting,	13:51:23
17 are two papers about it.	13:36:43	17 but I don't feel I have to go.	13:51:27
18 Q. So it is your opinion that if you	13:36:45	18 Q. I guess what I am asking is, if	13:51:31
19 don't cross-reference your CSDS analysis with a	13:36:48	19 McCrone in the 1970s was finding detectable levels	13:51:33
20 review of the Becke line, that you're not following	13:36:53	20 of chrysotile in Johnson's Baby Powder, you would	13:51:38
21 the procedure that's been referred to as the Su	13:36:57	21 have no reason to dispute McCrone's findings without	13:51:42
22 Method?	13:37:08	22 actually analyzing what it is that they looked at?	13:51:46
23 A. I think if you are trained	13:37:08	23 MR. HYNES: Same objections.	13:51:49
24 microscopist in polarized light microscopy and you	13:37:16	24 Go ahead.	13:51:50
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1 understand the principle behind refract index	13:37:21	1 A. In my view, of course I can neither	13:51:52
2 determination using Becke line or the dispersion	13:37:28	2 confirm or deny their results. However, as a matter	13:51:58
3 staining, you should automatically know you need to	13:37:33	3 of importance, I will look the sample myself.	13:52:06
4 check with another method if you're in doubt. It	13:37:40	4 Q. I want to go through some of your	13:52:11
5 should become automatically. However, if an analyst	13:37:51	5 report criticisms. And I think I want to go to -- I	13:52:32
6 is not trained in this sense, he might not, that is	13:37:58	6 want to start with just this section. What I'm	13:52:41
7 the purpose of my paper. I thought you should.	13:38:04	7 looking at here is page 24 of the pdf of Exhibit 3.	13:52:45
8 However, if you don't, now here is my paper to help	13:38:11	8 It's page four of your PowerPoint presentation.	13:52:51
9 you.	13:38:17	9 A. Okay.	13:52:55
10 MR. BRALY: Do you want to take a	13:38:20	10 Q. I will wait for you.	13:52:56
11 break?	13:38:21	11 A. Yes.	13:53:02
12 MR. HYNES: Sure.	13:38:22	12 Q. The image on the left, you use the	13:53:03
13 (A break was taken.)	13:47:03	13 term "suppressed." And on the right you use the	13:53:08
14 BY MR. BRALY:	13:49:29	14 term "unsuppressed." Do you see that?	13:53:12
15 Q. I wanted to start just by asking you	13:49:29	15 A. Yes.	13:53:14
16 about something that I was asking you right before	13:49:37	16 Q. Let's go through the basics. The	13:53:15
17 lunch, and that had to do with findings by other	13:49:40	17 basics are, you were not present when this image was	13:53:19
18 laboratories, finding chrysotile in Johnson &	13:49:43	18 captured on the microscope, correct?	13:53:22
19 Johnson's products. I specifically wanted to ask	13:49:47	19 A. Correct.	13:53:24
20 you about McCrone.	13:49:50	20 Q. The analyst who was there said that	13:53:25
21 Do you believe that the analysts at	13:49:54	21 the light intensity was all the way up, correct?	13:53:29
22 McCrone generally follow a sound methodology for	13:49:59	22 A. Correct.	13:53:31
23 identifying asbestos in things like talc?	13:50:02	23 Q. The image on the right was brightened	13:53:32
24 A. I do.	13:50:05	24 through software, correct?	13:53:38

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1 A. Photoshop.	13:53:40	1 whether illumination is correct or not. Which is to	13:56:18
2 Q. Through Photoshop, okay. And it is a	13:53:40	2 say, when I look the original image in MAS report,	13:56:27
3 presumption of yours that because it could be	13:53:45	3 like the first time the Gold Bond report Mickey sent	13:56:37
4 brightened through software, that the original image	13:53:48	4 to me in 2022 review, so my first reaction when I	13:56:45
5 lacked the full illumination intensity, correct?	13:53:55	5 saw the image, I said, something wrong, because, you	13:56:53
6 A. That was my conclusion.	13:53:59	6 see, many particle in the background they did not	13:56:59
7 Q. But whether or not, in fact, the	13:54:01	7 show up.	13:57:04
8 fully illumination intensity available for that	13:54:04	8 If you are in fully illumination, the	13:57:07
9 microscope was being utilized is something that you	13:54:08	9 light intensity is proper. I call it normal	13:57:11
10 don't know?	13:54:11	10 illumination. You should be able to see all the	13:57:17
11 A. No, I don't. That's the reason I	13:54:11	11 particles, the majority of particles in the field of	13:57:23
12 went to RJ Lee in Pittsburgh. I want to confirm my	13:54:15	12 view.	13:57:27
13 opinion. And the work I did confirm this	13:54:22	13 Now, when you see an image on the	13:57:29
14 comparison.	13:54:29	14 left, you're immediate reaction is the intensity of	13:57:31
15 Q. And that's something you did after	13:54:30	15 the light used, this in is insufficient or I call it	13:57:39
16 you issued the report in the MDL --	13:54:32	16 suppressed.	13:57:48
17 A. Exactly, I want confirm through my	13:54:35	17 Q. Presume with me for a moment that the	13:57:53
18 work.	13:54:38	18 intensity was as high as that particular model	13:57:59
19 Q. I have to finish the question,	13:54:39	19 microscope would allow it to go, assume that for me	13:58:02
20 because it's the way all this works.	13:54:42	20 for just a moment, okay?	13:58:07
21 A. Sorry.	13:54:45	21 A. (No verbal response.)	13:58:08
22 Q. You confirmed that after you authored	13:54:45	22 Q. If true, what else were they to do in	13:58:09
23 this report, correct?	13:54:48	23 capturing this image?	13:58:13
24 A. Correct.	13:54:50	24 A. You see, this Leica microscope are	13:58:15
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1 Q. By the way, the report that you	13:54:51	1 like the Olympus BH-2. Olympus BH-2 has a slider on	13:58:20
2 issued in the MDL and the report you issued in Kayme	13:54:53	2 the right side of the base of the microscope, as a	13:58:29
3 Clark's case, right? There is only one report from	13:54:59	3 minimum and as maximum. Simply by pulling that, you	13:58:35
4 May of this year?	13:55:02	4 know you are low intensity, high intensity or	13:58:41
5 A. Yeah, that's only report I issued.	13:55:03	5 medium.	13:58:48
6 Q. Just making sure. Wouldn't be the	13:55:06	6 But the Leica microscope is not	13:58:48
7 first time I got halfway through a deposition and	13:55:08	7 designed like this way. It has a wheel, not a	13:58:52
8 realize I was talking about the wrong report.	13:55:10	8 slider. The wheel has no stop. It turn 360	13:58:58
9 There is another example of this.	13:55:13	9 degrees. It did not have a mark on the side of	13:59:07
10 This is the next page, page 25 of the pdf. It's	13:55:19	10 intensity dial. So you simply by looking at the	13:59:12
11 paginated five of your PowerPoint.	13:55:24	11 wheel, you don't know which setting you are.	13:59:21
12 A. Correct.	13:55:28	12 What I'm saying, you don't know which	13:59:26
13 Q. This is a sample from what's referred	13:55:28	13 intensity, whether it is a full or half or minimum,	13:59:29
14 to as the Klayman sample, K-l-a-y-m-a-n?	13:55:30	14 you don't know. The only way you know is looking at	13:59:35
15 A. Yes.	13:55:35	15 the -- through the tube, observing the image. In	13:59:40
16 Q. Same questions, you have no idea	13:55:35	16 the meantime, you use your left hand to turn the	13:59:50
17 about whether or not the images on the left what's	13:55:38	17 wheel. Now you know whenever you think the	13:59:52
18 labeled as suppressed were or were not at their full	13:55:43	18 illumination is proper, you're stopped.	14:00:00
19 intensity on the microscope when those images were	13:55:48	19 So if you look at my Pittsburgh	14:00:07
20 captured, correct?	13:55:51	20 folder, I think the first one for the Valadez baby	14:00:10
21 A. I think there's two issues in this	13:55:52	21 powder samples I took three images. One is	14:00:17
22 statement. I don't need to know the setting,	13:55:56	22 suppressed. Another is I consider as normal	14:00:23
23 intensity setting, but for experienced analyst	13:56:04	23 illumination. And the third is I adjust that until	14:00:29
24 simply by looking at the image you would know	13:56:13	24 I cannot increase the intensity anymore. So I	14:00:35

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1 labeled that image as a maximum intensity. So I	14:00:41	1 you simply don't know.	14:03:21
2 have three images; suppressed, normal, and maximum.	14:00:47	2 MR. HYNES: Object to form.	14:03:24
3 The way with that microscope you	14:00:54	3 A. As matter of fact, you see, I would	14:03:25
4 cannot tell from the intensity adjustment, unlike	14:00:58	4 love to go to his lab, show him on the microscope,	14:03:28
5 BH-2 which you can. You can only determine whether	14:01:04	5 okay, what is the fully illumination, what is	14:03:34
6 the intensity is proper or under or over by looking	14:01:09	6 suppressed, what is the normal. The only way to	14:03:40
7 at image.	14:01:17	7 communicate with him is by using his microscope with	14:03:44
8 Q. So I don't think you actually	14:01:19	8 a sample on the stage. Because that is the best way	14:03:51
9 answered my question, but there is a lot of good	14:01:28	9 to explain that. If I could, I would love to go.	14:03:56
10 information here.	14:01:31	10 Actually, I wouldn't mind even give him some	14:04:02
11 A. Okay.	14:01:32	11 training to do the work better. Okay.	14:04:08
12 Q. I want to start with the point you	14:01:32	12 Q. Maybe at a different time. I think	14:04:11
13 brought up about the illumination folder in the	14:01:36	13 that ship has sailed now.	14:04:17
14 materials that you provided. There are -- and I	14:01:40	14 I wanted to ask. I am looking now at	14:04:29
15 haven't marked them. I haven't asked you about	14:01:44	15 page 32 of the pdf, which is page 12 of your	14:04:41
16 them, but I have them here, photos of suppressed	14:01:45	16 PowerPoint.	14:04:47
17 normal and max. I have seen those.	14:01:49	17 A. Okay.	14:04:48
18 Are those photos that were	14:01:53	18 Q. This is where we are talking about	14:04:50
19 manipulated digitally or are those images that you	14:01:55	19 the concept of total reflection.	14:04:51
20 took from the Leica microscope?	14:01:58	20 A. Yes.	14:04:55
21 A. Direct image from the microscope.	14:02:01	21 Q. Your testimony here is that analyzing	14:04:56
22 Q. Okay. That's an example that you did	14:02:04	22 the edge of a particle for the color is not	14:05:05
23 with the Leica microscope?	14:02:06	23 appropriate unless you confirm it through the Becke	14:05:11
24 A. Yes.	14:02:07	24 line?	14:05:16
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1 Q. Okay. And there is a video. I	14:02:08	1 A. Correct.	14:05:16
2 presume the video is of you doing that.	14:02:11	2 Q. I just want to make sure. The Becke	14:05:17
3 A. Yes.	14:02:14	3 line adjustment is to deal with this concept of	14:05:21
4 Q. That's something that you did with	14:02:14	4 total reflection; is that right?	14:05:26
5 Bryan Bandli and Matt Sanchez after your report in	14:02:17	5 A. It's the best way to recognize the	14:05:30
6 this case?	14:02:20	6 total reflection caused distortion to the central	14:05:36
7 A. Yeah, with Matt. Bryan, he was in	14:02:21	7 stop dispersion staining color. Whether the color	14:05:43
8 Europe. He was attending IMARC meeting. Okay. But	14:02:24	8 has been distorted due to the edge or boundary	14:05:48
9 he is online on Zoom.	14:02:29	9 effect can be determined by Becke line.	14:05:55
10 Q. The IMARC meeting, that's in Lyon,	14:02:32	10 Q. I want to ask you some follow-up	14:06:00
11 France?	14:02:37	11 questions on this:	14:06:02
12 A. Correct.	14:02:37	12 The edge or boundary effect, it can	14:06:03
13 Q. He got to go to France while you're	14:02:37	13 be -- it's a real thing, right? It's something that	14:06:10
14 hanging out in Pittsburgh?	14:02:40	14 happens without distortion, correct?	14:06:13
15 A. Yes.	14:02:43	15 MR. HYNES: Vague, overbroad.	14:06:17
16 Q. My question to you was, you're aware	14:02:44	16 Q. Let me ask a different question. I'm	14:06:20
17 that the analyst who did this imaging, Paul Hess,	14:02:53	17 sorry. Forget I asked that one.	14:06:22
18 said that the intensity was all the way up, all	14:02:56	18 When we looked at images that you	14:06:23
19 right? I want you to presume that it was. What	14:03:00	19 took just a moment ago, that series of images	14:06:25
20 else would he do? You follow what I'm saying?	14:03:04	20 between 18, Exhibit 18 and I think 24 and 25, there	14:06:28
21 A. Yeah.	14:03:08	21 were examples of fibers that had different colors	14:06:34
22 Q. You know, you keep saying that this	14:03:09	22 around the edges, correct.	14:06:40
23 was suppressed, but having not been there or	14:03:11	23 A. Correct.	14:06:42
24 experienced that, it strikes me as something that	14:03:17	24 Q. Right. So and you had confirmed by	14:06:43

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1 looking without the central stop at the Becke line	14:06:47	1 A. Then there is no effect. You see, if	14:10:09
2 to confirm that this was not a result of this total	14:06:53	2 it does not reach the critical angle, the	14:10:12
3 reflection phenomenon, correct?	14:06:56	3 corresponding central stop dispersion staining color	14:10:20
4 MR. HYNES: Objection, misstates	14:06:59	4 will not be altered so there is no effect on the	14:10:26
5 testimony.	14:07:01	5 color.	14:10:31
6 A. Could you say again?	14:07:01	6 Q. So I'm sorry. I'm sorry if I'm the	14:10:32
7 Q. Yes, I can.	14:07:02	7 one who is being dumb here.	14:10:37
8 A. Okay.	14:07:03	8 MR. PLACITELLA: Don't apologize. It	14:10:47
9 Q. When you identified an edge color or	14:07:03	9 happens a lot.	14:10:49
10 a boundary distinction color, you confirmed that it	14:07:07	10 THE WITNESS: I wish I can present	14:10:50
11 was not distortion by confirming through the Becke	14:07:13	11 some graphics I create after this report --	14:10:52
12 lines that this was not part of this total	14:07:18	12 BY MR. BRALY:	14:10:57
13 reflection distortion, correct?	14:07:21	13 Q. I'm sorry for interrupting. Let me	14:10:57
14 MR. HYNES: Form.	14:07:22	14 go back to Exhibit 19. This was one of the images	14:10:59
15 A. Correct.	14:07:23	15 that you took, right?	14:11:03
16 Q. So it is completely valid that you	14:07:24	16 A. Correct.	14:11:05
17 might have a fiber that has different colors in the	14:07:27	17 Q. And there are different colors in	14:11:06
18 middle versus the edge, because of a legitimate edge	14:07:31	18 this fiber?	14:11:08
19 effect, correct?	14:07:36	19 A. Correct.	14:11:09
20 MR. HYNES: Vague, overbroad.	14:07:37	20 Q. There is goldish in the middle.	14:11:10
21 A. I don't know whether the word	14:07:41	21 There is purple on the edges. You can have	14:11:12
22 "legitimate" is appropriate because, for example, in	14:07:44	22 different colors around the edge that is not the	14:11:15
23 my graph, I show you if the boundary or the	14:07:52	23 result of some kind of improper distortion?	14:11:18
24 interface between the liquid and the fiber, if that	14:07:59	24 A. Correct.	14:11:22
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1 angle exceed or equal the critical angle which the	14:08:08	1 Q. Okay. But you believe -- going back	14:11:23
2 starting angle occur the total reflection if it	14:08:19	2 to Exhibit 3, page 32 -- that this image in the top	14:11:33
3 happen that angle meet that criteria, I think	14:08:26	3 left, it is your opinion that this is the result of	14:11:39
4 another slide I calculate, for example, 83,	14:08:31	4 some kind of reflective distortion?	14:11:43
5 86 degrees, something like that. Once that angle	14:08:34	5 A. Yes.	14:11:46
6 reach the critical angle, then this wavelength will	14:08:40	6 Q. And to correct for this, Mr. Hess or	14:11:48
7 be totally reflected. It's not going to enter the	14:08:48	7 whoever the analyst is should remove the central	14:11:54
8 objective. Therefore, the corresponding central	14:08:51	8 stop and check the Becke line?	14:11:58
9 stop dispersion staining color is distorted.	14:08:58	9 A. Correct.	14:11:59
10 Q. I think all I'm trying to figure out	14:09:04	10 Q. And what color Becke line should they	14:12:00
11 is can you have an edge effect, a boundary effect	14:09:06	11 see?	14:12:03
12 like what we see on page 32 of Exhibit 3, that is	14:09:11	12 A. The Becke line, when you examine the	14:12:05
13 the result of distortion and can you also have a	14:09:17	13 Becke line, first you look at the relief of the	14:12:09
14 boundary edge effect that is not the result of	14:09:21	14 particle. If the liquid refract index is very close	14:12:16
15 distortion?	14:09:25	15 to the particle, the relief is very, very low or	14:12:23
16 A. Any so-called boundary effect will	14:09:28	16 unnoticeable. However, if the liquid is	14:12:32
17 always cause a distortion if the angle equal or	14:09:39	17 significantly higher or lower than the object, than	14:12:36
18 exceed the critical angle --	14:09:46	18 the structure, the relief will be very clear.	14:12:42
19 Q. I'm sorry for interrupting you. But	14:09:50	19 So if, for example, this fiber, which	14:12:46
20 if it doesn't exceed that critical angle --	14:09:52	20 I think may be Paul Hess did, if he examined the	14:12:54
21 A. It will not cause that.	14:09:54	21 same particle in Becke line mode by switching off	14:13:00
22 Q. But you will still have -- can you	14:09:56	22 the central stop, he should be able to see the	14:13:08
23 still have a boundary edge effect that is not the	14:09:58	23 relief of the edge is very obvious. However, the	14:13:15
24 product of distortion?	14:10:01	24 center, it's merged with the liquid. There is no	14:13:23

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1 little or no relief.	14:13:29	1 purplish, yellowish, orange-ish, something like	14:16:51
2 Q. When I've seen Becke line images, I	14:13:31	2 that. However, what Dr. Bow Lee did, he convert	14:16:55
3 have seen them as halos of reddish or greenish. Do	14:13:34	3 that chart into the color bar.	14:17:02
4 you know what I am talking about here?	14:13:40	4 Q. Like a visualization?	14:17:05
5 A. I know.	14:13:41	5 A. That's right. Before Dr. Bow Lee,	14:17:06
6 Q. I would hope so. Because I don't and	14:13:42	6 you will have to use Dr. Bloss chart. But it's not	14:17:10
7 you're Dr. Su.	14:13:49	7 the color chart what I am saying.	14:17:14
8 Is there a color that is associated	14:13:51	8 Q. It's a descriptive chart?	14:17:17
9 like a halo when you view this kind of thing in a	14:13:55	9 A. That's right. Actually that chart,	14:17:19
10 Becke line mode and, if so, what should it be?	14:13:58	10 every time when I got to a NVLAP lab to do the	14:17:33
11 MR. HYNES: Vague.	14:14:03	11 online assessment, I always give that chart to them.	14:17:38
12 A. I think the best way to answer this	14:14:06	12 Okay. And told them if you use Becke line to	14:17:45
13 is if I could present a color bar for Becke line,	14:14:10	13 determine the refract index, this the chart to use.	14:17:49
14 which nobody did until a couple months ago at the	14:14:19	14 Q. Next slide I want to talk to you	14:18:03
15 DRIMMC institute. Dr. Bow Lee, he create the first	14:14:26	15 about is this -- your slide 13 of the PowerPoint.	14:18:05
16 set of the Becke line color chart. McCrone did the	14:14:34	16 It's page 33 of Exhibit 3.	14:18:10
17 essentially stop dispersion standing chart. Eric	14:14:43	17 You had talked about this before.	14:18:13
18 Chatfield did the ISO chart. None of them created a	14:14:48	18 Dr. Longo had taken a PLM image and reported a	14:18:16
19 Becke line chart.	14:14:55	19 variety of different refractive indices within a	14:18:21
20 The first one I believe was done	14:14:59	20 particular bundle. Your conclusion here is that	14:18:25
21 couple months ago by Dr. Bow Lee. He asked me to	14:15:02	21 this is not possible.	14:18:29
22 review that. I think that's a great job. Will help	14:15:08	22 A. No.	14:18:31
23 people to use the Becke line.	14:15:11	23 Q. My question is, why not? If you have	14:18:32
24 Q. Sure.	14:15:13	24 a bundle of individual fibers, why would it not be	14:18:38
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1 A. You see, if you have that chart, you	14:15:14	1 possible for different chrysotiles in that bundle to	14:18:44
2 look at the color in the liquid and you look at the	14:15:16	2 have different refractive indexes?	14:18:48
3 color in the particle, you go to that chart, then	14:15:22	3 A. Let me explain. I know the history	14:18:51
4 you get the matching wavelengths, like the ISO or	14:15:27	4 of this 1866 SRM developed by NIST. If you look at	14:18:55
5 McCrone chart for central stop dispersion staining	14:15:31	5 the certificate, there are two names there.	14:19:03
6 color.	14:15:36	6 Jennifer Verkouteren, she is the supervisor of that	14:19:08
7 Q. So I think we are talking about two	14:15:41	7 lab. And a second name is John Phelps. John Phelps	14:19:15
8 different things here for a second. When you're	14:15:43	8 was the one who measured the refract index of this	14:19:23
9 talking about using Becke lines in something like	14:15:46	9 1866 chrysotile from Canada. The first thing they	14:19:31
10 this, it is simply to observe the relief between the	14:15:49	10 do in order to establish an SRM, which stands for	14:19:39
11 edge and the underlying immersion oil; is that	14:15:52	11 Standard Reference Material, which is job done by	14:19:49
12 right?	14:15:52	12 NIST. Their name is National Institute of Standards	14:19:56
13 A. Right.	14:15:59	13 and Technology. They have issued various standard	14:20:01
14 Q. You're saying there is a second layer	14:15:59	14 reference material.	14:20:07
15 of analysis that is essentially brand-new and not	14:16:01	15 The chrysotile is one of the	14:20:09
16 yet finalized to evaluate the halo color associated	14:16:04	16 asbestos. They have two sets, asbestos standards.	14:20:13
17 with the Becke line; is that right?	14:16:07	17 1866, which is common asbestos, including	14:20:17
18 MR. HYNES: Objection to form.	14:16:09	18 chrysotile, amosite and crocidolite, plus	14:20:25
19 A. No. Let me clarify. What I said,	14:16:10	19 fiberglass.	14:20:31
20 there are -- there is a method which is the laws	14:16:16	20 The second set is uncommon asbestos,	14:20:32
21 developed. However, it is chart with X, Y, X's and	14:16:23	21 which are the tremolite, actinolite, anthophyllite.	14:20:38
22 also the line says in this area the particle is	14:16:29	22 Now, when they are developing this standard	14:20:46
23 higher by .5, .03, something like that. However, it	14:16:34	23 reference material, John Phelps have close contact	14:20:52
24 does not have color. It only describe term, purple,	14:16:44	24 with me. The reason is, they were using the most	14:21:02

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1 accurate procedure to measure the refract index is 14:21:09	1 Whenever he run into any problem, he will call me. 14:25:38
2 called a spindle stage, which is developed by Dr. 14:21:14	2 Therefore, what I'm saying, this 1866 14:25:43
3 Bloss. Doc Bloss have just a book called The 14:21:21	3 chrysotile has a constant, very stable refract 14:25:50
4 Principle of Spindle Stage. 14:21:26	4 index. Gamma is 1.56. Gamma is 1.556. Alpha is 14:25:58
5 Q. I think I have that book. 14:21:28	5 1.549. This has been confirmed by many measurements 14:26:07
6 A. You have that? 14:21:30	6 of John Phelps. So in this bundle it's all 1866. 14:26:13
7 Q. I think I do. 14:21:31	7 It's not a bundle put together with Canadian 14:26:24
8 A. That's right. That's the most neat 14:21:32	8 chrysotile of Vermont or Italy. It is entirely from 14:26:32
9 technique to measure refract index in a sense, you 14:21:38	9 Canada. Therefore, this fiber has only one refract 14:26:42
10 mount the target mineral onto a tip of glass fiber, 14:21:45	10 index. Otherwise, it would be not qualified to be a 14:26:51
11 you use fingernail polish. You glue the object 14:21:56	11 standard reference material. 14:26:54
12 mineral onto that fiber. Now you mount that onto a, 14:22:01	12 Q. I understand the logic. 14:26:56
13 they call Goniometer, which is used in X-ray 14:22:08	13 A. Yeah. 14:26:58
14 detraction to sample mounting. The reason is, that 14:22:18	14 Q. Okay? 14:26:58
15 device can rotate in XY access, which means you can 14:22:24	15 A. The color, the reason it has a range 14:26:59
16 orient fiber to any direction you want, because when 14:22:33	16 of color like this micrograph indicates is, they are 14:27:04
17 you use the Becke line method, as I said in the 14:22:41	17 distorted dispersion staining color. 14:27:13
18 past, you have to change the oil. Then it would be 14:22:46	18 Q. Okay. As an analyst when you're 14:27:17
19 hard to keep on the same particle. You have to find 14:22:53	19 looking at something like this that looks like a 14:27:26
20 another particle to prepare in another oil to 14:23:00	20 fire work -- 14:27:29
21 measure that. But a spindle stage eliminate that 14:23:03	21 A. Yes. 14:27:31
22 need. You look at a single fiber, the same sample. 14:23:08	22 Q. -- how do you know which color to 14:27:32
23 You change the refract index of the oil by heating 14:23:15	23 sample to reference against the CSDS chart? 14:27:36
24 or cooling that until you saw a match. 14:23:19	24 A. Becke line. 14:27:41
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1 Because, for example, the chrysotile 14:23:27	1 Q. How does the Becke line show you 14:27:46
2 which had behaved like in the actual crystal so it 14:23:32	2 that? That's what I'm still -- this is where I 14:27:49
3 has two principal refract index, gamma and alpha. 14:23:37	3 don't know because I'm not a microscopy. 14:27:52
4 All the rest, the other five, they are by actual. 14:23:45	4 A. This image is the chrysotile 1866 14:27:56
5 There is three principal refract index. Chrysotile 14:23:50	5 chrysotile in 1.55 oil. Now we are looking at 14:28:01
6 has only two. 14:23:55	6 elongated direction, which is the gamma direction, 14:28:13
7 However, you need to orient the 14:23:57	7 whose refract index is slowly above the 1.55 oil. 14:28:21
8 direction, for example, gamma to be parallel to the 14:24:00	8 However if it's not at 25 degrees C, most likely 14:28:30
9 polarizer. Then you're measuring the true gamma. 14:24:06	9 it's under that. The oils refract index probably is 14:28:39
10 You have to orient the fiber perpendicular to the 14:24:11	10 higher, slightly higher than 1.550. Maybe is.551, 14:28:46
11 polarized light -- polarizer to measure the alpha. 14:24:15	11 something like that. Those correction has been 14:28:53
12 The spindle stage make this job easier. However, it 14:24:22	12 built in the conversion table I created. 14:28:58
13 is still very tedious, because in order to establish 14:24:30	13 Under the Becke line, it were in the 14:29:04
14 this as standard reference material, you can only -- 14:24:36	14 area of Dr. Bloss's chart in the area slightly above 14:29:09
15 you do not only measure wine fiber to represent the 14:24:41	15 a perfect match, which means the gamma directions 14:29:17
16 whole batch of the material. You have to measure 14:24:45	16 Becke line have a strong, slightly stronger orange, 14:29:26
17 many of them, make sure it is stable, refract index, 14:24:49	17 red orange color than the light blue color in the 14:29:35
18 then it will be qualified to be an SRM. 14:24:57	18 liquid. 14:29:40
19 So what John Phelps did when he was 14:25:02	19 You will find the Becke line image. 14:29:42
20 at NIST, it's very tedious job, because actually he 14:25:06	20 You look for that color pattern. Then you know here 14:29:47
21 went to Virginia Tech. At that time I'm still 14:25:12	21 is the true imagine between the liquid and the 14:29:55
22 finishing my PhD to learn the spindle stage 14:25:17	22 fiber. 14:30:02
23 technique. And after he returned to the NIST, what 14:25:26	23 Q. So I'm going to do this: You did 14:30:03
24 he did the measurement we were in close contact. 14:25:31	24 submit this week to me some photos of Becke line 14:30:09

		Page 154	Page 156
1	imaging.	14:30:14	1 index of the object. 14:33:45
2	A. Yeah. The Cargille glass.	14:30:15	2 Q. When you say the closest match, in 14:33:46
3	Q. Yes. You say glass --	14:30:21	3 this particular image, there are two particles in 14:33:48
4	A. Glass.	14:30:22	4 this particular image. And if we look at the 14:33:51
5	Q. You're looking at glass?	14:30:23	5 particle on the right in the top left section of the 14:33:54
6	A. Yeah.	14:30:24	6 particle on the right, it appears to be a blending 14:33:59
7	Q. Okay. So I marked one of these as	14:30:26	7 match there between the oil and the particle. Am I 14:34:04
8	Exhibit 29.	14:30:30	8 doing this right? 14:34:06
9	Cargille is a company. They supplied	14:30:47	9 A. Yes. 14:34:07
10	standards that you can use?	14:30:50	10 Q. Okay. So then, do you take the line 14:34:08
11	A. Yeah.	14:30:53	11 most closely associated with that matching; is that 14:34:11
12	Q. So that's clear on the record. So	14:30:53	12 right? 14:34:18
13	what this photo that you submitted to me is, is	14:30:56	13 A. Yes. 14:34:18
14	glass in 1.550 refractive index oil under the --	14:31:02	14 Q. You would use the color kind of 14:34:18
15	with the Becke line setting -- I keep calling it	14:31:10	15 brownish here and then compare that to the Bloss 14:34:21
16	oculus but it's not. What's it called?	14:31:15	16 chart and it will give you a refractive index value? 14:34:24
17	A. The objective.	14:31:20	17 A. It will tell you how close the 14:34:28
18	Q. The objective, yeah. So how does the	14:31:21	18 particle to the oil. The oil is like a measure. It 14:34:33
19	line, the line around the perimeter of this, one of	14:31:30	19 has the known value of 1.55. This glass from 14:34:39
20	them is kind of brownish. One of them is kind of	14:31:37	20 Cargille, actually was Corning glass, they use that 14:34:46
21	reddish brown. The other one is kind of greenish.	14:31:41	21 as the standards. This glass is M7 set because 14:34:52
22	Other one is kind of bluish. How do these lines	14:31:44	22 Cargille has issue three sets of the glass. This is 14:34:57
23	tell you how close this object is to the surrounding	14:31:48	23 the M7 set from the lot B, which has a refract index 14:35:01
24	refractive index oil?	14:31:52	24 of 1.55077 at 589 nanometer wavelengths, which is 14:35:12
		Page 155	Page 157
1	A. The Bloss chart, you use the Bloss	14:31:54	1 the standard wavelengths to describe the refract 14:35:23
2	chart to determine --	14:31:59	2 index. 14:35:27
3	Q. Okay.	14:32:01	3 So this area, you just point out, you 14:35:29
4	A. -- whether it is a match, how close	14:32:03	4 see here the particle looks like it merged into. 14:35:37
5	the match or how far no match.	14:32:05	5 You cannot see the relief. Then it indicates it's a 14:35:45
6	Q. All right.	14:32:09	6 very, very close match between the glass and the 14:35:52
7	A. If you refer to that chart, you will	14:32:10	7 liquid. Therefore, you should use this area to 14:35:59
8	immediately know the different, the Becke line.	14:32:15	8 measure as in the value of the glass refract index. 14:36:07
9	Q. Probably a Becke line, B-e-c-k-e?	14:32:24	9 Q. So when you figure that out, the area 14:36:14
10	A. Yeah, B-e-c-k-e.	14:32:29	10 that you should be using, is that when you're 14:36:17
11	Q. So you would have to, what, take a --	14:32:48	11 supposed to switch back to the central stop and then 14:36:21
12	the analyst would have to determine what color this	14:32:53	12 evaluate that same relative location? 14:36:25
13	is and then match it to the descriptive color in the	14:32:57	13 A. Yes. You see, I have a corresponding 14:36:27
14	Bloss chart?	14:33:02	14 image of this two particle in central stop mode. 14:36:31
15	A. Correct.	14:33:02	15 Can we switched to that micrograph? 14:36:36
16	Q. To figure this out. So there is a	14:33:03	16 Q. You do. Look at that. I will mark 14:36:44
17	subjectivity to the analyst saying that this is	14:33:05	17 that as Exhibit 30. 14:36:52
18	brown versus dark reddish or orange-ish and then	14:33:10	18 (Exhibit 30 Image 1.55 Glass CSDS 1.550 14:36:54
19	comparing that to a descriptive phrase on the Bloss	14:33:17	19 marked for identification.) 14:37:04
20	chart?	14:33:22	20 Q. Again, for the right particle, the 14:37:04
21	MR. HYNES: Object to form.	14:33:22	21 two particles in the center of the screen, you're 14:37:08
22	A. No. Let me explain. Actually, the	14:33:23	22 saying that the correct place to evaluate the color 14:37:11
23	analyst should look the area shows the closest	14:33:27	23 is in the top -- kind of the I call it the north, 14:37:15
24	match, then were the directive, the true reflect	14:33:35	24 northwest side of the right hand particle? 14:37:19

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1	A. Correct. Which you have confirmed	14:37:22	1	color. As I said, if I'm going to publish a paper	14:48:25
2	with the Becke line image.	14:37:25	2	about distorted dispersion staining color, I would	14:48:31
3	Q. All right.	14:37:27	3	say the distorted dispersion color is everywhere.	14:48:37
4	MR. HYNES: I want to note for the	14:37:29	4	It shows in every structure I examined.	14:48:42
5	record if you could go back to Exhibit 30, please.	14:37:30	5	So for every structure I examined, I	14:48:48
6	This looks a little bit different from the image	14:37:33	6	automatically switch between the central stop and	14:48:51
7	that was produced in advance of today's deposition.	14:37:35	7	Becke line. Occasionally I even use the annular	14:48:55
8	May be the monitor. I'm not certain, but it	14:37:39	8	stop, because that is three setting of the McCrone	14:49:02
9	looks --	14:37:43	9	dispersion staining objective. It make it very	14:49:06
10	MR. BRALY: Kevin --	14:37:44	10	convenient to switch between them without changing	14:49:12
11	MR. HYNES: I can look on your	14:37:48	11	the objective. Okay.	14:49:15
12	screen. I think it has to be the monitor.	14:37:49	12	Q. So I want to ask you about this, this	14:49:23
13	MR. BRALY: Okay.	14:38:33	13	section about misinterpreting your table. Let me	14:49:30
14	BY MR. BRALY:	14:38:34	14	get back on track.	14:49:54
15	Q. All right. So you have to use Becke	14:38:34	15	You have a section of your report	14:49:56
16	lines on something like this?	14:38:35	16	that claims that Dr. Longo is misinterpreting your	14:49:58
17	A. That's right.	14:38:37	17	table. Part of this I think is part and parcel of	14:50:02
18	Q. All right. Can I ask you about this	14:38:38	18	the decision Dr. Longo made to switch from using	14:50:07
19	middle paragraph? On the right-hand column. The	14:38:42	19	1.550 --	14:50:10
20	last sentence that you provide here [Reading] If	14:38:46	20	A. To 560.	14:50:11
21	such a theory is proved, it would shake the very	14:38:50	21	MR. HYNES: Let him finish the	14:50:14
22	foundation of physics.	14:38:53	22	question.	14:50:16
23	A. Yes. The reason I said that is, the	14:38:56	23	Q. And the justification that Dr. Longo	14:50:17
24	refract index is intrinsic physical property of	14:39:04	24	gave for switching from 1.550 to 1560 was that	14:50:19
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1	material. It was -- it is determined by the	14:39:10	1	statement I read earlier from your peer-reviewed	14:50:26
2	elemental composition and the crystal structure. So	14:39:14	2	publication from 2020?	14:50:28
3	within this fiber bundle in the micron scale neither	14:39:20	3	A. '22.	14:50:31
4	the elemental composition or the crystal structure	14:39:28	4	Q. Thank you. I appreciate it. That	14:50:34
5	change. Therefore, the resulting refract index	14:39:33	5	statement once again was found in Exhibit 13 where	14:50:55
6	should not be changed, because it also verified by	14:39:38	6	it says [Reading] There are chrysotile minerals	14:50:59
7	NIST, by measuring a series chrysotile for their	14:39:46	7	whose refractive indexes are significantly higher	14:51:01
8	standard reference material sample.	14:39:55	8	than those of a standard chrysotile from the NIST	14:51:05
9	Q. I need to...	14:39:59	9	SRM 1866 set. In that case, 1.555 or 1.560 instead	14:51:08
10	MR. HYNES: Do you want to take a	14:40:22	10	of 1.550 should be used to determine gamma.	14:51:16
11	break?	14:40:24	11	Do you see that?	14:51:20
12	MR. BRALY: Sure.	14:40:24	12	A. Yes, I do. That's my writing.	14:51:21
13	(A break was taken.)	14:47:31	13	Q. Right. That's what you published?	14:51:24
14	BY MR. BRALY:	14:47:34	14	A. Mm-hmm.	14:51:26
15	Q. I understand what you're saying about	14:47:43	15	Q. Right. So the relationship between	14:51:27
16	the variability what we were talking about the	14:47:45	16	NIST SRM 1866 and 1.550 RI fluid is .006. That's	14:51:32
17	variability of RIs within a bundle. I'm curious if	14:47:47	17	the difference?	14:51:44
18	you have ever -- you personally have ever tried to	14:47:53	18	A. That's right, 005 to 006.	14:51:44
19	distinguish refractive indices within a bundle if	14:47:56	19	Q. Right. 1866 SRM in your -- what	14:51:50
20	you've ever tried to do that or if you are just --	14:48:01	20	you've offered here is that refractive index of NIST	14:51:56
21	this is just something that you wouldn't do?	14:48:04	21	1866 is 1.556, right?	14:52:00
22	A. You have to, because every image, if	14:48:08	22	A. Right.	14:52:04
23	you look in the -- my Pittsburgh work, every	14:48:14	23	Q. Okay. So what you're saying is that	14:52:05
24	structure shows a range of dispersion staining	14:48:20	24	there are chrysotiles that will have higher	14:52:08

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1	refractive indexes than that; is that right? 14:52:12	1	chrysotile at all, but other than Dr. Longo, have 14:56:05
2	A. Yes. 14:52:15	2	you ever reviewed anybody determining the refractive 14:56:08
3	Q. Okay. And using that same gap of 14:52:15	3	index of chrysotile found naturally in a cosmetic 14:56:13
4	.006, it seems like in this writing you're 14:52:27	4	talc product? 14:56:16
5	anticipating the potential existence of chrysotile 14:52:30	5	A. No, I never seen any literature or 14:56:17
6	with refractive index values as high as 1.566. 14:52:33	6	report. 14:56:20
7	A. No. That is not true. Let me give 14:52:43	7	Q. So I'm taking it that you're not the 14:56:28
8	you the background I put that in my paper. That is 14:52:45	8	expert who would dispute or establish that 14:56:33
9	because M12001, in year 2001 NAVLAP the first time 14:52:53	9	chrysotile was or was not ever present in any 14:56:35
10	use the Calidria chrysotile as a test sample. 14:53:04	10	cosmetic talc products anywhere, right? That's not 14:56:39
11	Because it is about, as I said -- as you said, it's 14:53:11	11	what you do? 14:56:44
12	about five unit in the third decimal place higher 14:53:15	12	A. No. 14:56:44
13	than 1.866. So I believe quite a few lab failed the 14:53:21	13	Q. Right. But to the extent that 14:56:45
14	test because they have never seen chrysotile like in 14:53:32	14	chrysotile has been identified in some cosmetic talc 14:56:52
15	that kind of range of refract index. 14:53:39	15	products, you're unaware of what the refractive 14:56:58
16	Q. You're saying "that kind of range." 14:53:42	16	index would be for something like that, an inclusion 14:57:02
17	What you're indicating is that in 2001 Calidria was 14:53:44	17	like that? 14:57:09
18	being identified with an RI around 1.561? 14:53:50	18	MR. HYNES: Form, vague, incomplete 14:57:09
19	A. 60. 14:53:54	19	hypothetical. 14:57:11
20	Q. 60. You said it was five units in 14:53:56	20	A. Because I never seen the report or so 14:57:14
21	the third decimal place higher than -- 14:54:02	21	I never seen the data, if they find chrysotile in a 14:57:17
22	A. The 1866. 14:54:02	22	talc powder, what is the refract index they report? 14:57:23
23	Q. The 1866 is 1.56. 14:54:04	23	I have no idea. Okay. 14:57:29
24	A. As you said it's between my table 14:54:08	24	Q. Have you ever evaluated the 14:57:34
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1	here is for alpha is 006 higher. For gamma is 004. 14:54:11	1	refractive index of chrysotile from any deposit or 14:57:36
2	Yeah. That is the range. 14:54:21	2	location from China? 14:57:43
3	Q. That would be 1.560 for Calidria. 14:54:23	3	A. No. 14:57:44
4	That was reflected in 2001? 14:54:27	4	Q. You have evaluated chrysotile in 14:58:20
5	A. Correct. 14:54:31	5	1.550 oil and 1.560 oil? 14:58:23
6	Q. 21 years later, you published a paper 14:54:31	6	A. Correct. 14:58:29
7	saying that you should use a higher RI oil for some 14:54:35	7	Q. You did that as part of your 14:58:29
8	chrysotiles? 14:54:40	8	Pittsburgh project? 14:58:33
9	A. Correct. Or so in that paper I said 14:54:41	9	A. Yes. 14:58:35
10	for routine sample for the commercial lab, it's 14:54:48	10	Q. I understand you disagree with Dr. 14:58:36
11	okay, just keep using 1.55. However, when you are 14:54:53	11	Longo's interpretation maybe even the procedures 14:58:37
12	treating the tested sample, because if you fail that 14:54:59	12	that he followed, but the decision to utilize a 14:58:40
13	test twice in a row, your accreditation status were 14:55:04	13	different refractive index oil is not an error by 14:58:43
14	being terminated. Therefore, when I go to the 14:55:14	14	itself, is it? 14:58:47
15	asbestos lab, I always tell them when you are doing 14:55:19	15	A. No. 14:58:49
16	the test sample, you better be more careful and to 14:55:24	16	Q. Okay. It's simply changes the 14:58:50
17	use a 1.56 if it's chrysotile. Then your chance to 14:55:31	17	calibration of what you're looking at? 14:58:55
18	fail the test will be much less. 14:55:41	18	A. It changed the color. 14:58:57
19	Q. Have you ever measured the refractive 14:55:43	19	Q. Right. Then you would have to use a 14:58:59
20	index of chrysotile found naturally in a cosmetic 14:55:47	20	different chart to reflect for that different color? 14:59:01
21	talc product? 14:55:54	21	A. Exactly. 14:59:03
22	A. No, because I never encounter that. 14:55:55	22	Q. All right. I don't understand the 14:59:04
23	Q. Other than Dr. Longo -- and I 14:56:01	23	kindergarten slide. I understand the words on it -- 14:59:30
24	understand what you're saying that it's not 14:56:03	24	by the way, I'm looking at page 39 of Exhibit 3. 14:59:33

42 (Pages 162 - 165)

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1	It's paginated as page 19 of the PowerPoint. 14:59:37	1	not -- I'm not saying, if you look my paper, never, 15:03:52
2	A. Should I explain? 14:59:42	2	ever in my paper I said the chrysotile gamma is 15:03:58
3	Q. I would love it if you would. 14:59:43	3	within that -- is the highest is 1.58. The lowest 15:04:03
4	A. Okay. The reason I used this 14:59:45	4	1.54. It's not. The chrysotile is only a portion 15:04:10
5	knowledge is, if you go to previous slide, Dr. Longo 14:59:50	5	of that range. 15:04:16
6	said gamma value which is the parallel direction, 14:59:56	6	Q. Here is my question. I shouldn't 15:04:18
7	the range of the gamma is 1.540 to 1.580 which never 15:00:03	7	start it this way. These are all my questions. 15:04:22
8	say that. The reason he interpret is because my 15:00:12	8	This is my next question. 15:04:24
9	table is going from 300 to a nanometer matching 15:00:20	9	MR. PLACITELLA: Your killing me 15:04:28
10	wavelength to 1,000 at the full range of the 15:00:30	10	here. 15:04:30
11	dispersion staining color. Now, if you look at the 15:00:34	11	MR. BRALY: Thank you, Chris. 15:04:30
12	ISO chart, Dr. Eric put a dash line to say if it is 15:00:41	12	BY MR. BRALY: 15:04:32
13	chrysotile, the gamma value is usually within this 15:00:52	13	Q. Earlier you told me that the highest 15:04:32
14	narrow range. 15:00:57	14	refractive index value that you had ever seen for 15:04:35
15	Q. The ISO chart is the chart on the 15:00:58	15	chrysotile was somewhere in the ballpark of 1.56 in 15:04:39
16	right-hand side here, right? 15:01:00	16	the low end 1.56? 15:04:43
17	A. What I'm saying here, that range cite 15:01:02	17	A. The highest I saw is 1.560 to 1.561. 15:04:49
18	by Dr. Longo, 1.50 [ph] to 1.580 is the range the 15:01:06	18	Q. Okay. You did publish, I mean, this 15:04:55
19	color bar which is much wider that the possible 15:01:17	19	as a range that included a value up to 1.58. My 15:05:01
20	range of chrysotile. So you cannot interpret it, 15:01:22	20	question is, why did you publish that instead of 15:05:08
21	the chrysotiles central stop dispersion staining 15:01:29	21	something like 1.565 or something that would still 15:05:10
22	color could range from 300 to 1,000. Only in that 15:01:35	22	encompass the upper end of what you think is 15:05:14
23	case then his statement, his interpretation is 15:01:41	23	possible? 15:05:17
24	correct. 15:01:48	24	MR. HYNES: Asked and answered. 15:05:17
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1	However, when I put my table, 15:01:49	1	A. That paper 2003, in American 15:05:20
2	conversion table, I have to cover the all -- not 15:01:54	2	Mineralogist is not a paper discuss the actual range 15:05:29
3	only the possibility should be much wider than that. 15:02:00	3	of the chrysotile refract index. That table can be 15:05:36
4	Slide in kindergarten if you measure the children's 15:02:06	4	used for measuring other type material. You see? 15:05:41
5	height, you use a -- they call the stadiometer. The 15:02:10	5	It can be used not only for chrysotile, for asbestos 15:05:51
6	stadiometer must accommodate a much taller height, 15:02:18	6	mineral. It can be used, the material with similar 15:05:56
7	which doesn't mean the children could be 6 feet tall 15:02:24	7	dispersion coefficient. Therefore, that table has a 15:06:04
8	but the tool you use that would cover that beyond 15:02:28	8	general purpose of use. So it is not a paper saying 15:06:13
9	that, as such. 15:02:36	9	just for the asbestos analysis. Okay. 15:06:23
10	The ISO table, ISO color chart and my 15:02:39	10	Q. What Dr. Longo also records here is 15:06:37
11	conversion table is cover all the matching 15:02:45	11	that Walter McCrone published a range for chrysotile 15:06:44
12	wavelengths, not necessarily the matching 15:02:49	12	in parallel or gamma of 1.570 to 1.548. Have you 15:06:48
13	wavelengths for the chrysotile, is only portion of 15:02:53	13	analyzed that underlying data and do you have any 15:06:56
14	that. 15:02:58	14	particular criticisms of that entry? 15:07:00
15	Q. So I am trying to figure out if we 15:03:01	15	A. No, because I know this is from a 15:07:03
16	are really arguing about something worth arguing 15:03:06	16	paper of Doc McCrone. He analyzed a series 15:07:07
17	about here. What Dr. Longo reported was comparison 15:03:09	17	chrysotile from different locations in the world. 15:07:16
18	of chrysotile, what he labeled this column as is the 15:03:14	18	One of the sample showed the gamma as 1.570. He 15:07:25
19	refractive index range in parallel. What you're 15:03:19	19	reported that in his paper, but it's only at that 15:07:34
20	saying is that your range does include those values 15:03:26	20	specific location. It's not a general gamma value 15:07:42
21	even if overinclusive? 15:03:30	21	for the rest of the chrysotile. 15:07:47
22	MR. HYNES: Misstates testimony. 15:03:33	22	Q. What was the general location from 15:07:53
23	A. What I meant, my table, the lowest 15:03:34	23	which that finding came? 15:07:55
24	refract index is 1.540. The highest is 1.580. It's 15:03:40	24	A. You mean this high value? 15:07:59

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1 Q. Mm-hmm.	15:08:01	1 a co-contaminant?	15:11:54
2 A. I don't remember. And he has a table	15:08:03	2 A. Not I'm aware of, because I never	15:11:58
3 in that indicate which sample is from where. Okay.	15:08:04	3 investigated that. Okay.	15:12:01
4 But I don't remember exact location of that sample.	15:08:10	4 Q. I asked Mickey Gunter the same	15:12:03
5 You see, when NIST, they try to issue a standard	15:08:23	5 question about a year and a half ago. He also said	15:12:07
6 reference material in concert with the AHERA law,	15:08:29	6 no. That's neither here nor there.	15:12:09
7 that's the time they fail the needs, we need to	15:08:39	7 Are you aware of any co-contaminants	15:12:13
8 issue a standard reference material for asbestos.	15:08:45	8 in California chrysotile deposits?	15:12:19
9 They screen many chrysotile from different	15:08:51	9 A. I don't read any literature about	15:12:24
10 locations. Finally, they decide the Canadian	15:08:59	10 that, so I don't remember what kind of contaminate	15:12:28
11 chrysotile is most representative. That's why they	15:09:04	11 it has. If it's in the literature, maybe I have not	15:12:39
12 use that as an SRN.	15:09:10	12 read that literature.	15:12:44
13 Q. One of the issues that Dr. Longo has	15:09:42	13 Q. The SG-210 that you evaluated with	15:12:48
14 testified about and you've taken criticism with has	15:09:48	14 Matt Sanchez and Bryan Bandli was included in a	15:12:52
15 to do with the identification of Calidria at the	15:09:51	15 mixture of talc powder, correct?	15:12:58
16 refractive index that he found versus what you found	15:09:57	16 A. I think they are pure chrysotile.	15:13:02
17 in your Pittsburgh project last month.	15:10:02	17 Q. Okay. Did you also have a sample --	15:13:06
18 A. Correct.	15:10:07	18 samples that were just straight chrysotile? You may	15:13:10
19 Q. Fair? Okay. And your -- the	15:10:07	19 have. Did you?	15:13:15
20 position that you've taken here is that what he's	15:10:15	20 A. You mean Pittsburgh work?	15:13:24
21 identifying as asbestos is talc; is that right?	15:10:20	21 Q. Yeah.	15:13:29
22 A. That is my opinion.	15:10:25	22 MR. HYNES: Take a look at them	15:13:31
23 Q. And that's here for every one of the	15:10:28	23 titled Micrometer with SG-210 1.550 and 1.560.	15:13:38
24 reports that you've looked at that is referenced in	15:10:31	24 MR. BRALY: Yeah, I see it. Okay.	15:13:46
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1 your report?	15:10:34	1 Q. I take it you have never reviewed	15:14:01
2 A. Correct.	15:10:35	2 this report before. This report.	15:14:03
3 Q. That every time he identifies	15:10:36	3 A. Might have. It looks to me the title	15:14:16
4 chrysotile that's what he is identifying is talc?	15:10:38	4 I seem to remember. I look at that, but not	15:14:20
5 A. Yeah, that is my conclusion.	15:10:43	5 thoroughly.	15:14:28
6 Q. So, I want to ask you about how you	15:10:50	6 Q. Okay. In the section that I'm	15:14:28
7 deal with a particular aspect of this. I am going	15:10:54	7 looking at here, which I think is section 5, yeah,	15:14:35
8 to mark as Exhibit 31, a report dated October 9,	15:10:59	8 section 5, in a sample that has no talc in it but	15:14:42
9 2023.	15:11:04	9 does have Calidria --	15:14:49
10 (Exhibit 31 William Longo's Report dated	15:11:04	10 A. Which sample this?	15:14:54
11 October 9, 2023 marked for identification.)	15:11:05	11 Q. This is the sample of Calidria	15:14:56
12 Q. This report is 196 pages long. So	15:11:05	12 mounted in bentonite clay.	15:15:00
13 what I am doing, is this report in total will be	15:11:08	13 MR. HYNES: What is the M number?	15:15:03
14 Exhibit 31, but the section I am going to ask you	15:11:12	14 MR. BRALY: There isn't one.	15:15:04
15 about is Section 5 of that report. That will be	15:11:15	15 A. That is spiked. The bentonite is	15:15:05
16 Exhibit 32.	15:11:18	16 spiked with Calidria chrysotile. Of course you want	15:15:09
17 (Exhibit 32 Section 5 of Report dated	15:11:19	17 to see that.	15:15:13
18 October 9, 2023 marked for identification.)	15:11:23	18 Q. Right. What I'm saying is that this	15:15:14
19 Q. What Exhibit 32 is, is a mixture of	15:11:23	19 is, without a doubt, chrysotile?	15:15:17
20 Calidria asbestos mounted in a sample of bentonite	15:11:31	20 MR. HYNES: Objection; assumes facts.	15:15:20
21 clay, okay? That is what Dr. Longo prepared.	15:11:38	21 Q. There is nothing else in there.	15:15:22
22 So before I start asking about this,	15:11:43	22 A. If it's a spiked with chrysotile,	15:15:25
23 I want to ask you a couple of questions. Have you	15:11:46	23 under the presence of chrysotile should be a fact	15:15:32
24 ever known California chrysotile to include talc as	15:11:49	24 because the sample is like spiked or contaminated	15:15:38

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1 with chrysotile.	15:15:42	1 gamma.	15:19:01
2 Q. Right. So what we are looking at	15:15:44	2 Q. In order to evaluate a Becke line,	15:19:02
3 here on page six of Exhibit 32, that's chrysotile?	15:15:47	3 does it have to be oriented in the parallel or	15:19:06
4 A. Yes.	15:15:55	4 perpendicular direction?	15:19:07
5 Q. Okay. What color would you assign to	15:15:56	5 A. Depending if you are assessing the	15:19:08
6 what's seen here on page six of Exhibit 32?	15:16:08	6 gamma, it's parallel. If you're assessing alpha, it	15:19:12
7 A. Without looking at the Becke line, I	15:16:11	7 should be perpendicular.	15:19:18
8 cannot simply look at a central stop dispersion	15:16:17	8 Q. Even though this is on a 45-degree	15:19:19
9 staining color image to make the determination.	15:16:25	9 angle which is appropriate for a photo, you can tell	15:19:24
10 MR. HYNES: I will note that the	15:16:28	10 the orientation of what this is by the relationship	15:19:29
11 reproduction of this M71547-001CSM-002 chrysotile	15:16:29	11 of the other particles around it, right?	15:19:32
12 looks like a faded-out copy version of an image	15:16:38	12 A. Mm-hmm.	15:19:34
13 taken at Longo owes laboratory rather than digital	15:16:47	13 Q. That's correct, right? You have to	15:19:35
14 reproduction of same.	15:16:51	14 say "yes." You just have to articulate yes or no.	15:19:38
15 MR. BRALY: Thank you for your	15:16:56	15 You're saying "mm-hmm."	15:19:43
16 opinion, Kevin.	15:16:58	16 A. Your question again...	15:19:45
17 THE WITNESS: One thing I could tell	15:17:03	17 Q. With a particle in the 45-degree	15:19:47
18 from that image --	15:17:05	18 angle, you can determine the orientation of it by	15:19:49
19 BY MR. BRALY:	15:17:06	19 the reference to other particles in the image,	15:19:53
20 Q. This one?	15:17:06	20 correct?	15:19:56
21 A. The first one you show me, the	15:17:07	21 A. To determine what?	15:19:57
22 yellow.	15:17:10	22 Q. For example, if we go back to this in	15:20:00
23 Q. Yeah. This one?	15:17:10	23 parallel, we can identify the structures that are	15:20:06
24 A. Yes. I'm very sure, you see the	15:17:14	24 surrounding that fiber and then look at it in the 45	15:20:10
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1 refract index down here it says RI 1.567 to 1.570.	15:17:20	1 and determine the orientation of it in parallel,	15:20:15
2 That number doesn't match the color at all.	15:17:33	2 meaning the right edge, the area that's in the	15:20:22
3 Q. How do you know that if you haven't	15:17:37	3 northeast corner of this is the same as the east	15:20:28
4 looked at the Becke line?	15:17:39	4 side of the fiber in parallel?	15:20:31
5 A. No. What I'm saying, the refract	15:17:41	5 A. No, because if you look, the	15:20:34
6 index, he showed here, if you go back to my table --	15:17:43	6 polarizer is east/west.	15:20:40
7 can you pull out my 1.550 table for chrysotile.	15:17:52	7 Q. Right.	15:20:42
8 Q. I can, but what I'm trying to get at	15:17:57	8 A. Therefore, this section at a 45	15:20:43
9 is, if you don't know what color you're comparing it	15:18:00	9 degree, it is called gamma prime. It's between	15:20:49
10 to, how do you know that?	15:18:03	10 alpha and gamma.	15:20:53
11 A. It doesn't match any color in this	15:18:05	11 Q. I think you're misunderstanding what	15:20:54
12 image.	15:18:08	12 I'm asking you, and I don't know how to make it	15:20:58
13 Q. Okay.	15:18:08	13 clear.	15:20:59
14 A. It doesn't match. If you look at my	15:18:09	14 The tip of this in the northeastern	15:21:00
15 table.	15:18:12	15 corner of what is page nine of Exhibit 32, the tip	15:21:04
16 Q. All right. This is page 10, this	15:18:12	16 on the northeastern side of that fiber is the same	15:21:11
17 is -- can you not get a sense of the Becke line with	15:18:26	17 location as the eastern tip of the fiber on page six	15:21:15
18 the polarizer out by looking at the border between	15:18:30	18 of the same exhibit?	15:21:20
19 the fluid and the edge of the particle?	15:18:33	19 A. Yes. They are the same fiber.	15:21:21
20 A. This structure is in the 45 degree.	15:18:38	20 Q. All right. So if we go to, say, page	15:21:23
21 It's neither parallel or perpendicular.	15:18:44	21 10 we are looking at that fiber, can we look at	15:21:27
22 Q. Right.	15:18:52	22 where the border between the oil and the fiber are	15:21:33
23 A. Therefore, you cannot use this image.	15:18:53	23 blended together closest to determine the same Becke	15:21:36
24 Even use Becke line to determine if it's alpha or	15:18:57	24 line effect that you had discussed previously?	15:21:40

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1	A. Yes or no. When I say "yes," if the Becke line image is focused, then you examine, you compare the dispersed Becke line color against Dr. Bloss's chart, you will know this structure has a higher refract index than the liquid.	15:21:44	15:21:51
2			15:21:59
3			15:22:08
4			15:22:18
5			15:22:27
6	Q. This was another image. This is M71547-001CSM3. Do you this?	15:22:31	
7			
8	A. I saw that.	15:22:37	
9	Q. Again, this is the Calidria sample in bentonite clay. Do you have any reason to dispute that the particles shown in this image is Calidria?	15:22:38	15:22:42
10			15:22:46
11			
12	A. It is Calidria, yes.	15:22:50	
13	Q. Okay. The same question then for the next photo, which is at page 18 of Exhibit 32, which is M71547-001CSM-004. Same question, given the preparation of the sample, is the particle shown here Calidria?	15:22:54	15:23:02
14			15:23:16
15			15:23:19
16			15:23:21
17			15:23:28
18	MR. HYNES: Same objection.	15:23:36	
19	A. It is Calidria chrysotile and it's refract index looks, if it in general look like if you put a Calidria in 1.550, it should look similar to that.	15:23:42	15:23:48
20			
21			15:23:49
22			
23	Q. Page 23 of Exhibit 32 is image M71547-001CSM-005. Given the preparation of this	15:23:57	
24			
Page 179		Page 181	
1	sample, this being Calidria with bentonite clay, is there any doubt that the fiber in the middle of the screen is Calidria?	15:24:04	15:24:09
2			15:24:13
3			
4	MR. HYNES: Assumes facts. I will have a recurring objection on this document. Each of the images shown have been these photographic -- or photocopied reproductions as opposed to digital reproductions of these images, sort of washed out and faded.	15:24:15	15:24:17
5			15:24:19
6			15:24:23
7			15:24:26
8			15:24:29
9			
10	You can answer.	15:24:30	
11	MR. BRALY: That is a profound speaking objection, but that's all right.	15:24:34	15:24:35
12			
13	BY MR. BRALY:	15:24:38	
14	Q. Do you remember my question?	15:24:38	
15	A. Yes.	15:24:40	
16	Q. Okay.	15:24:44	
17	A. This is a chrysotile structure.	15:24:45	
18	Q. The next image is at page 28 of Exhibit 32. This is image identified as M71547-001CSM006. Given that this sample was a mixture of Calidria and bentonite clay, do you have any reason or do you believe that this image indicated in the middle of this screen is Calidria?	15:24:55	15:25:05
19			15:25:12
20			15:25:17
21			15:25:21
22			15:25:24
23			
24	MR. HYNES: Again, same objections.	15:25:24	

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1 report said one end is talc, one end is chrysotile. 15:29:18	1 this fiber in materiality. I'm curious what you 15:32:50
2 Q. That's what I want to ask you about. 15:29:22	2 think this is. 15:32:55
3 A. I said it is a misinterpretation of 15:29:24	3 A. I can't see any transition. This 15:32:57
4 the color. 15:29:28	4 is -- I think this structure is a single structure. 15:33:01
5 Q. All right. Let me ask -- go ahead. 15:29:29	5 It's not two structures with a boundary between 15:33:06
6 It sounds like you're prepared to answer questions 15:29:33	6 them. 15:33:11
7 about it. Go ahead. 15:29:37	7 Q. Because there is no boundary, you 15:33:11
8 A. Because there is no clear boundary 15:29:37	8 don't believe the talc and chrysotile can 15:33:13
9 interface between the so-called two structures. The 15:29:48	9 intergrowth? 15:33:15
10 only thing you can see from that image is the color 15:29:54	10 A. That's right, because their crystal 15:33:16
11 change, but not in between there is no interface. 15:30:00	11 structure is so much different. It cannot gradually 15:33:19
12 Q. Can we take a look at some of these? 15:30:09	12 change from talc to chrysotile or from chrysotile to 15:33:25
13 This is -- I want you to explain this, okay? 15:30:12	13 talc. 15:33:31
14 A. Okay. 15:30:15	14 Q. In the next photo which is page five. 15:33:32
15 Q. This is Exhibit 33. 15:30:16	15 This is the crossed polars photo. What in your 15:33:36
16 A. This is a report issued June 13th of 15:30:18	16 opinion is accounting for the change in coloration 15:33:40
17 2022 entitled "PLM Analysis of Talc/Chrysotile 15:30:20	17 from one end to the other on this one? 15:33:43
18 Bundle Intergrowths." 15:30:25	18 A. Thickness. 15:33:46
19 (Exhibit 33 PLM Analysis of Talc/Chrysotile 15:30:22	19 Q. Thickness. 15:33:47
20 Bundle Intergrowths marked for identification.) 15:30:25	20 A. You see, here is a crossed polarized 15:33:49
21 Q. I am going to go straight to the 15:30:29	21 image. Then the color is the interference color 15:33:55
22 gamma, okay? 15:30:34	22 which is determined by two factors. One is the 15:34:07
23 What we see here in the first image, 15:30:36	23 difference between the gamma and the alpha or 15:34:12
24 which is at page seven of Exhibit 33 and it's image 15:30:39	24 between the largest versus the smallest refract 15:34:16
Page 183	Page 185
1 M71171-001 ISO 004. You see a fiber structure that 15:30:44	1 index. The second factor is the thickness. Okay. 15:34:22
2 has two distinctly different levels of brightness 15:30:55	2 Q. Okay. Jumping ahead -- I'm sorry. 15:34:29
3 associated with each end of it. What is this in 15:31:05	3 For the next image here, which is page six of 15:34:33
4 your opinion? 15:31:09	4 Exhibit 33, on the elongation slide, is thickness 15:34:38
5 A. It is distorted dispersion staining 15:31:10	5 also the determinator for why the coloration is 15:34:45
6 color, not two type of mineral. 15:31:14	6 different along the length of this fiber? 15:34:49
7 Q. Okay. 15:31:20	7 A. Yes. 15:34:52
8 A. Because if you look at the crystal 15:31:21	8 Q. All right. 15:34:53
9 structure between talc and chrysotile, they are 15:31:26	9 A. This is a cross polarized image 15:34:55
10 quite different. In that case, if this is an 15:31:31	10 superimposed to buy a four-wave compensator, they 15:34:59
11 intergrowth, they should have a very distinctive 15:31:40	11 call it a four-wave plate, whatever you call, it is 15:35:06
12 boundary between the two species. They can never 15:31:44	12 an accessory in the polarized light microscope. 15:35:11
13 gradually transition between these two different 15:31:52	13 Q. Complicated pieces of equipment. 15:35:19
14 crystal structures. So the difference show by this 15:31:57	14 The next page is the page we looked 15:35:24
15 particle is only the central stop dispersion 15:32:05	15 at previously. Does thickness of this structure in 15:35:26
16 staining color which is no different from the other 15:32:11	16 your opinion account for the different coloration 15:35:30
17 image it shows edge, middle, a range of dispersion 15:32:16	17 here? 15:35:33
18 staining color. So this is not an intergrowth at 15:32:23	18 A. No. 15:35:33
19 all. 15:32:28	19 Q. No. 15:35:34
20 Q. Let me scroll back here through some 15:32:28	20 A. What account for the variation of 15:35:36
21 of these earlier images of this same thing. In 15:32:30	21 dispersion staining color here is the total 15:35:41
22 exhibit -- page four of this exhibit, which is 15:32:34	22 refraction caused by interface between liquid and 15:35:49
23 Exhibit 33, we are looking at the polarizer out 15:32:37	23 the particle and also between particle fiber and 15:35:55
24 photo. So it appears that there is a transition in 15:32:41	24 fiber. 15:36:02

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1	Q. So here is where I'm struggling. The prior three photos had the same representative	15:36:02	1	MR. HYNES: Sure. Let's go off the record.	15:39:29
2		15:36:05	2	(Witness excused.)	15:39:30
3	change in color in the prior three photos it was all due to thickness. But when we get to this one, a similar change of the same particle is now due to distortion. Do you follow why that's confusing to me?	15:36:13	4	(Deposition concluded at 3:39 p.m.)	
4		15:36:20	5		
5		15:36:23	6		
6		15:36:26	7		
7		15:36:30	8		
8	MR. HYNES: Objection to form.	15:36:31	9		
9	A. Yes. The reason that image is crossed polarized image, this is a plain polarized	15:36:31	10		
10	image and the optical chrysography they are showing	15:36:36	11		
11	a different aspect of the refract index	15:36:44	12		
12	relationship. Okay.	15:36:57	13		
13		15:36:59	14		
14	Q. Same image in alpha on the next page, which is page eight of Exhibit 33. What accounts for the difference in color here?	15:37:03	15		
15		15:37:07	16		
16	A. Distorted dispersion staining color due to the total refraction.	15:37:09	17		
17		15:37:15	18		
18	Q. Don't you find it a little bit coincidental that the distortion happens to coincide with the same locations on that fiber that you previously said were due to the thickness of it?	15:37:19	19		
19		15:37:21	20		
20		15:37:24	21		
21		15:37:26	22		
22		15:37:29	23		
23	MR. HYNES: Same objection.	15:37:31	24		
24	A. I don't see any problem with that.	15:37:31			
Page 187		Page 189			
1	Q. The next image in gamma is page 12 of this exhibit. This is M71202-005CSM003. What's identified as one end talc and the other end chrysotile I'm presuming you're saying could not be without a boundary.	15:37:40	1	CERTIFICATE	15:37:45
2		15:37:45	2	I, Sandra Robertson, a Notary Public and	15:37:55
3		15:37:55	3	Certified Court Reporter of the State of New Jersey,	
4		15:37:59	4	do hereby certify that prior to the commencement of	
5		15:38:03	5	the examination, the witness was duly sworn by me	
6	A. That is my opinion.	15:38:04	6	via Zoom.	
7	Q. All right. What accounts for the differences on the left side of this fiber versus the differences on the right side of this fiber?	15:38:07	7	I DO FURTHER CERTIFY that the foregoing is a	15:38:12
8		15:38:12	8	true and accurate transcript of the testimony as	
9		15:38:14	9	taken stenographically by and before me via Zoom at	
10	A. Again, it's normal central stop dispersion color or distorted central stop dispersion staining color.	15:38:17	10	the time, place and on the date hereinbefore set	
11		15:38:24	11	forth, to the best of my ability.	
12		15:38:30	12	I DO FURTHER CERTIFY that I am neither a	
13	Q. Okay. So if you took this same image and did a Becke line analysis of it, you're thinking you would get a singular refractive index for the entire length of that fiber?	15:38:33	13	relative nor employee nor attorney nor counsel of	
14		15:38:36	14	any of the parties to this action, and that I am	
15		15:38:39	15	neither a relative nor employee of such attorney or	
16		15:38:42	16	counsel, and that I am not financially interested in	
17	A. If you use Becke line to examine this structure, you will find it's like the Cargille glass. You will find where it shows a match or dis-match or there is no match at all. Okay.	15:38:44	17	the action.	
18		15:38:52	18		
19		15:39:02	19		
20		15:39:08	20		
21	MR. BRALY: Kevin, I probably have a couple hours left of this, not of this specifically, but do you think we should probably just stop for the day because he has to get out at 4?	15:39:19	21	Notary Number: 2108796	
22		15:39:20	22	CCR License Number: 30XI00209500	
23		15:39:24	23	License Expiration: 6/30/26	
24		15:39:27	24		

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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